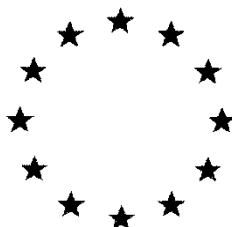


# ***European Commission***



**Draft Assessment Report prepared according to the Commission  
Regulation (EU) N° 1107/2009**

**Pepino Mosaic Virus, EU strain, mild  
isolate Abp1  
Pepino Mosaic Virus, CH2 strain, mild  
isolate Abp2  
Volume 2**

**Rapporteur Member State: Spain**

**July 2019**

## Version History

When	What
	Completeness check report of the dossier submitted by the notifier
March 2019	DAR submitted to the Notifier. Reception of comments
July 2019	DAR revised

## Table of contents

<b>A. LIST OF THE TESTS, STUDIES AND INFORMATION SUBMITTED .....</b>	<b>4</b>
<b>A.1. IDENTITY .....</b>	<b>4</b>
<b>A.2. BIOLOGICAL PROPERTIES .....</b>	<b>8</b>
<b>A.3. DATA ON APPLICATION AND EFFICACY .....</b>	<b>18</b>
<b>A.4. FURTHER INFORMATION .....</b>	<b>20</b>
<b>A.5. METHODS OF ANALYSIS.....</b>	<b>22</b>
<b>A.6. EFFECTS ON HUMAN HEALTH.....</b>	<b>24</b>
<b>A.7. RESIDUES IN OR ON TREATED PRODUCTS, FOOD AND FEED.....</b>	<b>30</b>
<b>A.8. FATE AND BEHAVIOUR IN THE ENVIRONMENT .....</b>	<b>31</b>
<b>A.9. EFFECTS ON NON-TARGET ORGANISM.....</b>	<b>38</b>
<b>A.10. SUMMARY AND EVALUATION OF ENVIRONMENTAL IMPACT .....</b>	<b>41</b>

## **A. LIST OF THE TESTS, STUDIES AND INFORMATION SUBMITTED**

### **A.1. IDENTITY**

#### **Annex IIM Data and Information**

<b>Data point</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Company Report No Source (where different from company) GLP or GEP status Published or not</b>	<b>Vertebrate study  Y/N</b>	<b>Data Protection Claimed  Y/N</b>	<b>Justification if data protection is claimed</b>	<b>Owner*</b>
B.1.3.1	Bussas V.	2015a	Receipt of deposit N° DSM 32069 of microorganism PepMV-Abp1. Budapest treaty on the international recognition of the deposit if microorganisms for the purposes of patent procedures. DSMZ, Germany. Report number: DSM 32069  GLP: no Unpublished	N	N	Proprietary information	Abiopep S.L.
B.1.3.1	Bussas V.	2015b	Receipt of deposit N° DSM 32070 of microorganism PepMV-Abp2. Budapest treaty on the international recognition of the deposit if microorganisms for the purposes of patent procedures. DSMZ, Germany. Report Number: DSM 32070  GLP: no Unpublished	N	N	Proprietary information	Abiopep S.L.
B.1.3.2	Jones R.A.C., Koenig R., Lesemann D.	1980	Pepino mosaic virus, a new potexvirus from pepino ( <i>Solanum muricatum</i> ). <i>Annals of Applied Biology</i> 94:61-68.  GLP: no Published	N	N		LIT
B.1.3.3	Gómez P., Sempere R., Elena S.F., Aranda M.A.	2009	Mixed infections of Pepino mosaic virus strains modulate the evolutionary dynamics of this emergent virus. <i>Journal of Virology</i> 83:12378-12387.  GLP: no Published	N	N		LIT
B.1.3.4 B.1.4.1 B.1.4.2	Agüero J.	2017a	Method of production of the Microbial Pest Control Agents (MPCAs) PepMV, EU strain, mild isolate Abp1 and PepMV, CH2 strain, mild isolate Abp2 and manufacturing of the	N	N	Proprietary information	Abiopep S.L.

<b>Data point</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Company Report No Source (where different from company) GLP or GEP status Published or not</b>	<b>Vertebrate study  Y/N</b>	<b>Data Protection Claimed  Y/N</b>	<b>Justification if data protection is claimed</b>	<b>Owner*</b>
			Microbial Pest Control Product (MPCP) AbioProtect®. Abiopep S.L., Spain.  GLP: No  Unpublished				
B.1.3.6	Aguilar J., Hernandez-Gallardo M., Cenis J., Lacasa A., Aranda M.	2002	Complete sequence of the Pepino mosaic virus RNA genome. Archives of virology 147:2009-2015.  GLP: no  Published	N	N		LIT
B.1.4.3	Aranda, M.	2016b	Method for the absolute quantification of PepMV genome copies by real time one-step RT-PCR in watery extracts of tomato plants. CEBAS-CSIC, Spain.  GLP: No  Published	N	N	Proprietary information	Abiopep S.L.
B.1.3.6	Cotillon A.C., Girard M., Ducouret S.	2002	Complete nucleotide sequence of the genomic RNA of a French isolate of Pepino mosaic virus (PepMV). Archives of Virology 147:2231-2238. DOI: 10.1007/s00705-002-0873-8.  GLP: No  Published	N	N		LIT
B.1.4.2	Baños M.	2016	Physico-Chemical characterization of technical Abp1 and Abp2 and formulation AbioProtect® Laboratorios Munuera S.L., Spain. Report number: 16-4951-01 GLP : Yes Unpublished	N	Y	Proprietary information	Abiopep S.L.
B.1.4.2	de Gea A.	2017	Analyses of phytopathogenic fungi and bacteria in tomato plant extract (Solanum lycopersicum) from the active substances, PepMV-Abp1 and PepMV-Abp2, of the Plant Protection Product AbiopProtect®. Report number : IP-17-2223/1; IP-17-2224/1; IP-15-2225/1; IP-17-2226/1; IP-17-2227/1 and IP-17-2228/1. Microgaia Biotech S.L., Spain.	N	N	Proprietary information	Abiopep S.L.

<b>Data point</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Company Report No Source (where different from company) GLP or GEP status Published or not</b>	<b>Vertebrate study  Y/N</b>	<b>Data Protection Claimed  Y/N</b>	<b>Justification if data protection is claimed</b>	<b>Owner*</b>
			GLP: No Unpublished				
B.1.4.3	Inglés M.J.	2017	Reports of research on Salmonella, Listeria, Escherichia coli, faecal coliform or aerobic count of 5 batches of Abioprotect®. Report number: M-17-0306/1; M-17-0307/1; IP-17-0308/1; IP-17-0309/1 and IP-17-0310/1. Microgaia Biotech S.L.  GLP: No Unpublished	N	N	Proprietary information	Abiopep S.L.

\*LIT: LITERATURE

**Annex IIM Data and Information**

<b>Data point</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Company Report No Source (where different from company) GLP or GEP status Published or not</b>	<b>Vertebrate study  Y/N</b>	<b>Data Protection Claimed  Y/N</b>	<b>Justification if data protection is claimed</b>	<b>Owner*</b>
MP 1.4	Agüero J.	2017a	Method of production of the Microbial Pest Control Agent (MPCA) PepMV, EU strain, mild isolate Abp1 and PepMV, CH2 strain, mild isolate Abp2 and manufacturing of the Microbial Pest Control Product (MPCP). Abiopep S.L., Spain. No GLP Not published	N	N	Proprietary information	Abiopep S.L.
MP 1.4	Aranda M.A.	2016b	Method for the absolute quantification of PepMV genome copies by real time one-step RT-PCR in watery extracts of tomato plants. CEBAS-CSIC, Spain. No GLP Not published	N	N	Proprietary information	Abiopep S.L.
MP 1.4	Bussas V.	2015a	Receipt of deposit N° DSM 32069 of microorganism PepMV-Abp1. Budapest treaty on the international recognition of the deposit if microorganisms for the purposes of patent procedures. DSMZ, Germany. Report number: DSM 32069	N	N	Proprietary information	Abiopep S.L.

Data point	Author(s)	Year	Title Company Report No Source (where different from company) GLP or GEP status Published or not	Vertebrate study  Y/N	Data Protection Claimed  Y/N	Justification if data protection is claimed	Owner*
			No GLP Not published				
MP 1.4	Bussas V.	2015b	Receipt of deposit N° DSM 32070 of microorganism PepMV-Abp2. Budapest treaty on the international recognition of the deposit if microorganisms for the purposes of patent procedures. DSMZ, Germany. Report number: DSM 32070 No GLP Not published	N	N	Proprietary information	Abiopep S.L.
MP 1.4	Jones R.A.C., Koenig R., Lesemann D.	1980	<i>Pepino mosaic virus</i> , a new potexvirus from pepino ( <i>Solanum muricatum</i> ). Annals of Applied Biology 94:61-68 No GLP Published	N	N	-	LIT

## A.2. BIOLOGICAL PROPERTIES

### Annex IIM Data and Information

Hanssen, I. M., Paeleman, E., Vandewoestijne, L., Van Bergen, C., Bragard, B., Lievens, AC., Vanachter and Thomma, J. 2009. Pepino mosaic virus isolates and differential symptomatology in tomato. *Plant Pathology*. 58, 450–460.

Hernández-Llopis D., Alfaro-Fernández A., González-Nebauer S., Font-San-Ambrosio M.I., 2014. Cambios fisiológicos provocados por dos aislados del virus del mosaico del pepino dulce (pepmv) en plantas de tomate que expresan sintomatologías distintas). XVII Congreso de la Sociedad Española de Fitopatología, P-087-01570, 270.

Data point	Author(s)	Year	Title Company Report No Source (where different from company) GLP or GEP status Published or not	Vertebrate study  Y/N	Data Protection Claimed  Y/N	Justification if data protection is claimed	Owner*
B.2.1.1/01	Chewachong G.M., Miller S.A., Blakeslee J.J., Francis D.M., Morris T.J., Qu F.	2014	Generation of an attenuated, cross-protective <i>Pepino mosaic virus</i> variant through alignment-guided mutagenesis of the viral capsid protein. <i>Phytopathology</i> 105:126-134. DOI: 10.1094/PHYTO-01-14-0018-R No GLP Published	N	N		LIT
B.2.1.1/02 B.2.2.1/01	Schenk M.F., Hamelink R., van der Vlugt R.A.A., Vermunt A.M.W., Kaarsenmaker R.C., Stijger I.C.C.M.M	2010	The use of attenuated isolates of <i>Pepino mosaic virus</i> for cross-protection. <i>European Journal of Plant Pathology</i> 127:249-261. DOI: 10.1007/s10658-010-9590-4 No GLP Published	N	N		LIT
B.2.1.1/03 B.2.2.1/02	Sempere R.N., Gómez-Aix C., Ruiz-Ramon F., Gómez P., Hasiów-Jaroszewska B., Sánchez-Pina M.A., Aranda M.A.	2016	<i>Pepino mosaic virus</i> RNA-dependent RNA polymerase POL domain is a hypersensitive response-like elicitor shared by necrotic and mild isolates. <i>Phytopathology</i> 106. DOI: 10.1094/phyto-10-15-0277-r No GLP Published	N	N		LIT
B.2.1.1/04	Vermunt A.M.W., Kaarsemaker R.C.	2017	Multi-genotype cross-protection against <i>Pepino mosaic virus</i> in tomato. <i>Crop Protection</i> 96:116-122. DOI: 10.1016/j.cropro.2017.02.007 No GLP Published	N	N		LIT
B.2.1.2/01 B.2.6/01	Cotillion A.C., Girard M., Ducouret S.	2002	Complete nucleotide sequence of the genomic RNA of a French isolate of <i>Pepino mosaic virus</i> (PepMV). <i>Archives of Virology</i> 147:2231-2238. DOI: 10.1007/s00705-002-0873-8 No GLP Published	N	N		LIT



Data point	Author(s)	Year	Title Company Report No Source (where different from company) GLP or GEP status Published or not	Vertebrate study  Y/N	Data Protection Claimed  Y/N	Justification if data protection is claimed	Owner*
B.2.1.2/02	French C. J., Bouthillier M., Bernardy M., Ferguson G., Sabourin M., Johnson R.C., Masters C., Godkin S., Mumford R.	2001	First report of <i>Pepino mosaic virus</i> in Canada and the United States. Plant Disease 85:1121. DOI: 10.1094/PDIS.2001.85.10.1121B No GLP Published	N	N		LIT
B.2.1.2/03 B.2.3/01 B.2.5/01	Jones R.A.C., Koenig R., Lesemann D.	1980	Pepino mosaic virus, a new potexvirus from pepino ( <i>Solanum muricatum</i> ) Annals of Applied Biology 94:61-68 No GLP Published	N	N		LIT
B.2.1.2/04 B.2.5/02	Ling K.S.	2007	Molecular characterization of two <i>Pepino mosaic virus</i> variants from imported tomato seed reveals high levels of sequence identity between Chilean and US isolates. Virus Genes 34. DOI: 10.1007/s11262-006-0003-x. No GLP Published	N	N		LIT
B.2.1.2/05	Ling K.S., Wintermantel W.M., Bledsoe M	2008	Genetic composition of <i>Pepino mosaic virus</i> population in North American greenhouse tomatoes. Plant Disease 92:1683-1688. DOI: 10.1094/PDIS-92-12-1683. No GLP Published	N	N		LIT
B.2.1.2/06	Ling K.S., Li R., Bledsoe M.	2013	<i>Pepino mosaic virus</i> genotype shift in North America and development of a loop-mediated isothermal amplification for rapid genotype identification. Virology Journal 10. DOI: 10.1186/1743-422x-10-117 No GLP Published	N	N		LIT
B.2.1.2/08	Maroon-Lago C.J., Guaragna M.A., Jordan R.L., Hammond J., Bandla M., Marquardt S.K.	2005	Two unique US isolates of <i>Pepino mosaic virus</i> from a limited source of pooled tomato tissue are distinct from a third (European-like) US isolate. Archives of Virology 150:1187-1201. DOI: 10.1007/s00705-005-0495-z No GLP Published	N	N		LIT
B.2.1.2/09	Moreno-Pérez M.G., Pagán I., Aragón-Caballero L., Cáceres F., Fraile A., García-Arenal F.	2014	Ecological and genetic determinants of <i>Pepino mosaic virus</i> emergence. Journal of virology 88:3359-3368. No GLP Published	N	N		LIT

Data point	Author(s)	Year	Title Company Report No Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Data Protection Claimed Y/N	Justification if data protection is claimed	Owner*
B.2.1.2/10	Mumford R.A. and Metcalfe E.J.	2001	The partial sequencing of the genomic RNA of a UK isolate of <i>Pepino mosaic virus</i> and the comparison of the coat protein sequence with other isolates from Europe and Peru. Archives of Virology 146. DOI: 10.1007/s007050170015. No GLP Published	N	N		LIT
B.2.1.2/11 B.2.2.1/03	Pagan I., Córdoba-Sellés M.d.C., Martínez-Priego L., Fraile A., Malpica J.M., Jordá C., García-Arenal F.	2006	Genetic structure of the population of <i>Pepino mosaic virus</i> infecting tomato crops in Spain. Phytopathology 96:274-279 No GLP Published	N	N		LIT
B.2.1.2/12	Pospieszny H., Hasiów B., Borodynko N.	2008	Characterization of two distinct Polish isolates of <i>Pepino mosaic virus</i> . European Journal of Plant Pathology 122. DOI: 10.1007/s10658-008-9280-7 No GLP Published	N	N		LIT
B.2.1.2/13	Roggero P., Masenga V., Lenzi R., Coghe F., Ena S., Winter S.	2001	First report of <i>Pepino mosaic virus</i> in tomato in Italy. Plant Disease 3 No GLP Published	N	N		LIT
B.2.1.2/14 B.2.3/02	Soler S., Prohens J., Díez M.J., Nuez F.	2002	Natural occurrence of <i>Pepino mosaic virus</i> in <i>Lycopersicon</i> species in central and southern Peru. Journal of Phytopathology 150:49-53. DOI:10.1046/j.1439-0434.2002.00712.x. No GLP Published	N	N		LIT
B.2.1.2/15	van der Vlugt R.A.A., Stijger C.C.M.M., Verhoeven J.T.J., Lesemann D.E.	2000	First Report of <i>Pepino Mosaic Virus</i> on Tomato. Plant Disease 84:103. DOI: 10.1094/PDIS.2000.84.1.103C. No GLP Published	N	N		LIT
B.2.2.1/04 B.2.2.2/01 B.2.5/03	Ferguson G.	2001	Managment of <i>Pepino mosaic virus</i> in greenhouse tomatoes. Factsheet. Ministry of Agriculture, Food and Rural Affairs, Ontario. No GLP Published	N	N		LIT

Data point	Author(s)	Year	Title Company Report No Source (where different from company) GLP or GEP status Published or not	Vertebrate study  Y/N	Data Protection Claimed  Y/N	Justification if data protection is claimed	Owner*
B.2.2.1/05	Hanssen I.M., Peter van Esse H., Ballester A.-R., Hogewoning S.W., Ortega-Parra N., Paeleman A., Lievens B., Bovy A.G., Thomma B.P.H.J.	2011	Differential tomato transcriptomic responses induced by <i>Pepino mosaic virus</i> isolates with differential aggressiveness. Plant Physiology 156:301-318. DOI: 10.1104/pp.111.173906. No GLP Published	N	N		LIT
B.2.2.1/06	Hasiów-Jaroszewska B., Borodynko N., Jackowiak P., Figlerowicz M., Pospieszny H.	2011	Single mutation converts mild pathotype of the <i>Pepino mosaic virus</i> into necrotic one. Virus research 159:57-61 No GLP Published	N	N		LIT
B.2.2.1/07	Hasiów-Jaroszewska B., Paeleman A., Ortega-Parra N., Borodynko N., Minicka J., Czerwonec A., Thomma B.P., Hanssen I.M.	2013	Ratio of mutated versus wild-type coat protein sequences in <i>Pepino mosaic virus</i> determines the nature and severity of yellowing symptoms on tomato plants. Molecular Plant Pathology 14:923-933. No GLP Published	N	N		LIT
B.2.2.1/08	Hull R.	2014	Plant Virology. Chapter 3, pp 63-91 Academic press, San Diego, CA No GLP Published	N	N		LIT
B.2.2.1/09	Soler-Aleixandre S., López C., Díez M.J., de Castro A.P., Nuez F.	2005	Association of <i>Pepino mosaic virus</i> with tomato collapse. Journal of Phytopathology 153:464-469. DOI: 10.1111/j.1439-0434.2005.01002.x No GLP Published	N	N		LIT
B.2.2.1/10 B.2.2.2/02 B.2.5/04	van der Vlugt R.	2009	<i>Pepino mosaic virus</i> . Hellenic Plant Protection Journal 2:47-56 No GLP Published	N	N		LIT
B.2.2.2/03	Gal-On A., Shibolet Y.M.	2006	Cross-protection, in: G. Loebeinstein and J. P. Carr (Eds.), Natural Resistance Mechanisms of Plants to Viruses. Springer Netherlands, Dordrecht. pp. 261-288 No GLP Published	N	N		LIT

Data point	Author(s)	Year	Title Company Report No Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Data Protection Claimed Y/N	Justification if data protection is claimed	Owner*
B.2.2.2/04	McKinney H.H.	1929	Mosaic diseases in the Canary Islands, West Africa and Gibraltar. Journal of Agricultural Research. 39:577-578. No GLP Published	N	N		LIT
B.2.2.2/05	Natsuaki T.	2012	Viral attenuation and cross protection to control plant viral diseases Food and Fertilizer Technology Center. No GLP Published	N	N		LIT
B.2.2.2/06	Pennazio S., Roggero P., Conti M.	2001	A history of plant virology. Cross-protection. The New Microbiologica 24:99-114. No GLP Published	N	N		LIT
B.2.2.2/07	Sherwood J.L.	1987	Mechanisms of cross-protection between plant virus strains. Plant resistance to viruses:136-150. No GLP Published	N	N		LIT
B.2.2.2/08	Tatineni S., French R.	2006	The coat protein and Nla protease of two <i>potyviridae</i> family members independently confer superinfection exclusion. Journal of Virology 90:10886-10905. DOI: 10.1128/jvi.01697-16 No GLP Published	N	N		LIT
B.2.2.2/09	Zhang X.F., Sun R., Guo Q., Zhang S., Meulia T., Halfmann R., Li D., Qu F.	2017	A self-perpetuating repressive state of a viral replication protein blocks superinfection by the same virus. PLOS Pathogens 13:e1006253. DOI: 10.1371/journal.ppat.1006253. No GLP Published	N	N		LIT
B.2.3/03	Agüero J.	2017b	Study of the presence of <i>Pepino mosaic virus</i> (PepMV) on alternative and potential non-tomato host plants. Abiopep S.L., Spain Report number ABP03/2017 No GLP Not published	N	N		Abiopep S.L.
B.2.3/04	Blystad D.R., Vlugt R., Alfaro-Fernandez A., Cordoba M.D., Bese G., Hristova D., Pospieszny H., Mehle N., Ravnika M., Tomassoli L., Varveri C., Nielsen S.L.	2015	Host range and symptomatology of <i>Pepino mosaic virus</i> strains occurring in Europe. European Journal Plant Pathology 143. DOI: 10.1007/s10658-015-0664-1 No GLP Published	N	N		LIT

Data point	Author(s)	Year	Title Company Report No Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Data Protection Claimed Y/N	Justification if data protection is claimed	Owner*
B.2.3/05	Córdoba M.C., Martínez-Priego L., Jordá C	2004	New natural hosts of <i>Pepino mosaic virus</i> in Spain. Plant Disease 88:906. DOI: 10.1094/PDIS.2004.88.8.906D No GLP Published	N	N		LIT
B.2.3/06	Davino S., Accotto G.P., Masenga V., Torta L., Davino M.	2009	Basil ( <i>Ocimum basilicum</i> ), a new host of <i>Pepino mosaic virus</i> . Plant Pathology 58:407. DOI: 10.1111/j.1365-3059.2009.02026.x No GLP Published	N	N		LIT
B.2.3/07	Fakhro A., von Barga S., Bandte M., Büttner C., Franken P., Schwarz D.	2011	Susceptibility of different plant species and tomato cultivars to two isolates of <i>Pepino mosaic virus</i> . European Journal of Plant Pathology 129:579-590. DOI: 10.1007/s10658-010-9722-x. No GLP Published	N	N		LIT
B.2.3/08	Jordá C., Perez A.L., Martínez-Culebras P., Abad P., Lacasa A., Guerrero M.	2001	First report of <i>Pepino mosaic virus</i> on tomato in Spain. Plant Disease 85:1292 No GLP Published	N	N		LIT
B.2.3/09	Martin J., Mousserion C.	2002	Potato varieties which are sensitive to the tomato strain of <i>Pepino mosaic virus</i> (PepMV). La Défense des Végétaux (France), Phytoma. No GLP Published	N	N		LIT
B.2.3/10	Papayiannis L.C., Kokkinos C.D., Alfaro-Fernández A.	2012	Detection, characterization and host range studies of <i>Pepino mosaic virus</i> in Cyprus. European Journal of Plant Pathology 132:1-7. DOI: 10.1007/s10658-011-9854-7 No GLP Published	N	N		LIT
B.2.3/11	Peralta I., Spooner D.	2000	Classification of wild tomatoes: a review. Kurtziana 28:45-54 No GLP Published	N	N		LIT
B.2.3/12	Prohens J., Rodríguez-Burruero A., Nuez F.	2005	Utilization of genetic resources for the introduction and adaptation of exotic vegetable crops: The case of pepino ( <i>Solanum muricatum</i> ). Euphytica 146:133-142. DOI: 10.1007/s10681-005-3882-3 No GLP Published	N	N		LIT

Data point	Author(s)	Year	Title Company Report No Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Data Protection Claimed Y/N	Justification if data protection is claimed	Owner*
B.2.3/13	Verhoeven J.T.J., van der Vlugt R.A.A., Roenhorst J.W.	2003	High similarity between tomato isolates of <i>Pepino mosaic virus</i> suggests a common origin. European Journal of Plant Pathology 109:419-425. DOI: 10.1023/a:1024261121468. No GLP Published	N	N		LIT
B.2.3/14	Werkman A., Sansford C.	2010	Pest Risk Analysis for <i>Pepino mosaic virus</i> for the EU. Deliverable Report 4.3. EU Sixth Framework Project Project PEPEIRA. No GLP Published	N	N		LIT
B.2.4	Gergerich R.C., Dolja V.V.	2006	Introduction to plant viruses, the invisible foe. The Plant Health Instructor. No GLP Published	N	N		LIT
B.2.5/05	Agüero J.	2017c	Study to evaluate the storage stability and shelf life of the Microbial Pest Control Product AbioProtect® and its components <i>Pepino mosaic virus</i> (PepMV), EU strain, mild isolate App1 and PepMV, CH2 strain, mild isolate Abp2. Abiopep S.L., Spain. Report number: ABP04/2017 No GLP Not published	N	N	Proprietary information	Abiopep S.L.
B.2.5/06	Alfaro-Fernández A., Del Carmen Córdoba-Sellés M., Herrera-Vásquez José Á., Cebrián M.d.C., Jordá C	2010	Transmission of <i>Pepino mosaic virus</i> by the fungal vector <i>Olpidium virulentus</i> . Journal of Phytopathology 158:217-226. DOI: 10.1111/j.1439-0434.2009.01605.x No GLP Published	N	N		LIT
B.2.5/07	Céspedes A.J.	2015a	Evaluación de diferentes desinfectantes con y sin solarización para la desinfección de sacos de sustrato de fibra de coco de un cultivo de tomate inoculado con PePMV. Estación Experimental Las Palmerillas (El Ejido, Almería), Spain. Report number: LPA/2015-23/S GEP Not published	N	N		LIT
B.2.5/08	Córdoba-Selles M.d.C., García-Rández A., Alfaro-Fernández A., Jordá-Gutiérrez C.	2007	Seed transmission of <i>Pepino mosaic virus</i> and efficacy of tomato seed disinfection treatments. Plant Disease 91:1250-1254. DOI: 10.1094/PDIS-91-10-1250 No GLP Published	N	N		LIT

Data point	Author(s)	Year	Title Company Report No Source (where different from company) GLP or GEP status Published or not	Vertebrate study  Y/N	Data Protection Claimed  Y/N	Justification if data protection is claimed	Owner*
B.2.5/09	Hanssen I.M., Mumford R., Blystad D., Cortez I., Hasiów-Jaroszewska B., Hristova D., Pagán I., Pereira A., Peters J., Pospieszny H., Ravnikar M., Stijger I., Tomassoli L., Varveri C., van der Vlugt R., Nielsen S.L.	2010b	Seed transmission of <i>Pepino mosaci virus</i> in tomato Eur J Plant Pathol (2010) 126:145–152 No GLP Published	N	N		LIT
B.2.5/10	Krinkels M.	2001	PepMV causes sticky problem. Prophyta, May 2001:30-33 No GLP Published	N	N		LIT
B.2.5/11	Lacasa A., Guerrero Díaz M.M., Hita I., Martínez M.A., Jordá C., Bielza P., Contreras J., Alcázar A., Cano A.	2003	Implicaciones de los abejorros ( <i>Bombus</i> spp.) en la dispersión del virus del mosaico del pepino dulce ( <i>Pepino mosaic virus</i> ) en cultivos de tomate. Boletín de sanidad vegetal. Plagas 29 No GLP Published	N	N		LIT
B.2.5/12	Mayne S., O'Neill T.	2017	<i>Pepino mosaic virus</i> of tomato – new results on strains, symptoms and persistence. Protected Edibles. ADAS, UK No GLP Published	N	N		LIT
B.2.5/13	Mehle N., Gutiérrez-Aguirre I., Prezelj N., Delić D., Vidic U., Ravnikar M.	2014	Survival and transmission of <i>Potato virus Y</i> , <i>Pepino mosaic virus</i> , and <i>Potato Spindle Tuber Viroid</i> in Water. Applied and Environmental Microbiology 80:1455-1462. DOI: 10.1128/aem.03349-13 No GLP Published	N	N		LIT
B.2.5/14	O'Neil T., Spence N., Mumford R., Skelton A.	2003	Final Report on project PC 181: Protected tomato: sources, survival and disinfection of <i>Pepino mosaic virus</i> (PepMV) ADAS/CSL, UK No GLP Published	N	N		LIT
B.2.5/15	Prats C.	2017a	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southern Spain, 2016). Agrocolor S.L., Spain Report Number ACEX/1274/AB GEP Not published	N	Y	Proprietary information	Abiopep S.L.

Data point	Author(s)	Year	Title Company Report No Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Data Protection Claimed Y/N	Justification if data protection is claimed	Owner*
B.2.5/16	Prats C.	2017b	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southeast Spain, 2016). Agrocolor S.L., Spain. Reprot number: ACEX/1277/AB GEP Not published	N	Y	Proprietary information	Abiopep S.L
B.2.5/17	Schwarz D., Beuch U., Bandte M., Fakhro A., Büttner C., Obermeier C.	2010	Spread and interaction of <i>Pepino mosaic virus</i> (PepMV) and <i>Pythium aphanidermatum</i> in a closed nutrient solution recirculation system: effects on tomato growth and yield. Plant Pathology 59:443-452. DOI: 10.1111/j.1365-3059.2009.02229.x No GLP Published	N	N		LIT
B.2.5/18	Shipp J.L., Buitenhuis R., Stobbs L., Wang K., Kim W.S., Ferguson G	2008	Vectoring of <i>Pepino mosaic virus</i> by bumble-bees in tomato greenhouses. Annals of Applied Biology 153:149-155. DOI: 10.1111/j.1744-7348.2008.00245.x No GLP Published	N	N		LIT
B.2.5/19	Spence N.J., Basham J., Mumford R.A., Hayman G., Edmondson R., Jones D.R.	2006	Effect of <i>Pepino mosaic virus</i> on the yield and quality of glasshouse-grown tomatoes in the UK. Plant Pathology 55:595-606. DOI: 10.1111/j.1365-3059.2006.01406.x. No GLP Published	N	N		LIT
B.2.5/20	Stobbs L., Greig N., Weaver S., Shipp L., Ferguson G	2009	The potential role of native weed species and bumble bees ( <i>Bombus impatiens</i> ) on the epidemiology of <i>Pepino mosaic virus</i> . Canadian Journal of Plant Pathology 31:254-261 No GLP Published	N	N		LIT
B.2.5/21	Wright D., Mumford R.	1999	<i>Pepino mosaic Potexvirus</i> (PepMV): first records in tomato in the United Kingdom. Central Science Laboratory. No GLP Published	N	N		LIT
B.2.6/02	Welter S., Dölle S., Lehmann K., Schwarz D., Weckwerth W., Worm M., Franken P.	2013	<i>Pepino mosaic virus</i> infection of tomato affects allergen expression, but not the allergenic potential of fruits. PloS one 8:e65116. No GLP Published	N	N		LIT

\*LIT: LITERATURE



**Annex IIM Data and Information**

<b>Data point</b>	<b>Author</b>	<b>Year</b>	<b>Title Doc. No., (prev. used Doc. No.), (Report No.) Source (where different from company) GLP or GEP status, Published or not</b>	<b>Vertebrate study Y/N</b>	<b>Data protection claimed Y/N</b>	<b>Justification if data protection is claimed</b>	<b>Owner</b>
B.2.1 B.2.2.2 B.2.5 B.2.6 B.2.7	Baños M.	2016	Physico-Chemical Characterization of technical Abp1 and Abp2 and formulation AbioProtect®. Laboratorios Munuera S.L., Spain Report number: 16-4951-01 GLP Not published	N	Y	Proprietary information	Abiopep S.L.
B.2.2.1	Agüero J.	2017c	Study to evaluate the storage stability and shelf life of the Microbial Pest Control Product AbioProtect® and its components Pepino mosaic virus (PepMV), EU strain, mild isolate App1 and PepMV, CH2 strain, mild isolate Abp2. Abiopep S.L., Spain. Report number: ABP04/2017 No GLP Not published	N	N	Proprietary information	Abiopep S.L.
B.2.7	Arteseros A., Martínez M	2017	Analysis FQ three different batches of tomato plant watery extract containing two strains, PepMV-Abp1 (European genotype) and PepMV-Abp2 MV (Chilean genotype) IDUQC Laboratorios ALMABE, Spain. Report number: AP42800 No GLP Not published	N	N	Proprietary information	Abiopep S.L.
B.2.8	Aranda M.A.	2016b	Method for the absolute quantification of PepMV genome copies by real time one-step RT-PCR in watery extracts of tomato plants. CEBAS-CSIC, Spain. No GLP Not published	N	N	Proprietary information	Abiopep S.L.

### A.3. DATA ON APPLICATION AND EFFICACY

#### Annex IIM Data and Information

Agüero J. (2017a) Method of production of the Microbial Pest Control Agents (MPCAs) PepMV, EU strain, mild isolate Abp1 and PepMV, CH2 strain, mild isolate Abp2 and manufacturing of the Microbial Pest Control Product (MPCP) AbioProtect®. Abiopep S.L., Spain.

#### Annex IIIM Data and Information

Author(s)	Data point	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
Agüero J.	MP 6.6.2	2017b	Study of the presence of <i>Pepino mosaic virus</i> (PepMV) on alternative and potential non-tomato host plants. Abiopep S.L., Spain Report number: ABP03/2017 No GLP Not published	N		Abiopep S.L.
Alfaro-Fernández A., Del Carmen Córdoba-Sellés M., Herrera-Vásquez José A., Cebrián M.d.C., Jordá C.	MP 6.6	2010	Transmission of <i>Pepino mosaic virus</i> by the fungal vector <i>Olpidium virulentus</i> . Journal of Phytopathology 158:217-226. DOI: 10.1111/j.1439-0434.2009.01605.x No GLP Published	N		
Aranda M.A., Sempere R.N., Gómez P., Agüero J., Méndez A	MP 6.1	2016a	Use of two isolates of <i>Pepino mosaic virus</i> to protect against infection by the same virus. International patent publication WO2016/0198722A1. World Intellectual Property Organisation (WIPO). WIPO 15-12-2016 No GLP Published	N		Abiopep S.L.
Céspedes A.J.	MP 6.6.1 MP 6.6.2	2015a	Evaluación de diferentes desinfectantes con y sin solarización para la desinfección de sacos de sustrato de fibra de coco de un cultivo de tomate inoculado con PePMV. Estación Experimental Las Palmerillas (El Ejido, Almería), Spain. Fundación Cajamar Report number: LPA/2014-23/S GEP Not published	N		
Céspedes, A.J.	MP 6.2 MP 6.4.1 MP 6.4.3 MP 6.5	2015b	Vaccination strategy to control <i>Pepino mosaic virus</i> (PepMV) in tomato crop. Estación Experimental Las Palmerillas (El Ejido, Almería), Spain. Fundación Cajamar Report numbers: LPA/2014-23/Ca; LPA/2014-23/Ve; LPA/2014-23/An. GEP Not published	Y	Proprietary information	Abiopep S.L.
Ferguson G.	MP 6.6	2001	Management of <i>Pepino mosaic virus</i> in greenhouse tomatoes. Factsheet. Ministry of Agriculture, Food and Rural Affairs, Ontario. No GLP Published	N		
Gal-On A., Shibolet Y.M.	MP 3.2	2006	Cross-protection, in: G. Loebeinstein and J. P. Carr (Eds.), Natural Resistance Mechanisms of Plants to Viruses Springer Netherlands, Dordrecht. pp. 261-288 No GLP	N		

Author(s)	Data point	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
			Published			
Gómez P. Sempere R., Elena S.F. Aranda M.A.	MP 6.1	2009	Mixed infections of <i>Pepino mosaic virus</i> strains modulate the evolutionary dynamics of this emergent virus. Journal of Virology 83:12378-12387 No GLP Published	N		
Lacasa A., Guerrero Diaz M.M., Hita I., Martínez M.A., Jordá C., Bielza P., Contreras J., Alcázar A., Cano A.	MP 6.6	2003	Implicaciones de los abejorros ( <i>Bombus</i> spp.) en la dispersión del virus del mosaico del pepino dulce ( <i>Pepino mosaic virus</i> ) en cultivos de tomate. Boletín de sanidad vegetal. Plagas 29 No GLP Published	N		
McKinney H.H.	MP 3.2	1929	Mosaic diseases in the Canary Islands, West Africa and Gibraltar. Journal of Agricultural Research. 39:577-578 Not GLP Published	N		
Natsuaki T.	MP 3.2	2012	Viral attenuation and cross-protection to control plant viral diseases Food and Fertilizer Technology Center No GLP Published	N		
Pennazio S., Roggero P., Conti M.	MP 3.2	2001	A history of plant virology. Cross-protection. The new microbiologica 24:99-114 No GLP Published	N		
Prats C.	MP 6.2 MP 6.4.1 MP 6.4.3 MP 6.5 MP 6.6.1 MP 6.6.2	2017a	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect®, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southern Spain, 2016). Agrocolor S.L., Spain. Report Number ACEX/1274/AB GEP Not published	Y	Proprietary information	Abiopep S.L.
Prats C.	MP 6.2 MP 6.4.1 MP 6.4.3 MP 6.5 MP 6.6.1 MP 6.6.2	2017b	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect®, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southeast Spain, 2016). Agrocolor S.L. Report number: ACEX/1277/AB GEP Not published	Y	Proprietary information	Abiopep S.L.
Prats C.	MP 6.1	2017c	Field study to evaluate the crop safety and the efficiency and velocity of the infection of the Plant Protection Product (PPP) AbioProtect®, applied at different doses in tomato crop (Southern Spain, 2016). Agrocolor S.L., Spain. Report number: ACEX/1276/AB GEP Not published	Y	Proprietary information	Abiopep S.L.
Prats C.	MP 6.2 MP 6.4.1 MP 6.4.3	2017d	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect®, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Canary Islands, Spain, 2017). Agrocolor S.L., Spain. Report number: ACEX-1296-AB GEP Not published	Y	Proprietary information	Abiopep S.L.

Author(s)	Data point	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
Sherwood J.L.	MP 3.2	1987	Mechanisms of cross-protection between plant virus strains. Plant resistance to viruses:136-150 No GLP Published	N		
Shipp J.L., Buitenhuis R., Stobbs L., Wang K., Kim W.S., Ferguson G	MP 6.6	2008	Vectoring of <i>Pepino mosaic virus</i> by bumble-bees in tomato greenhouses. Annals of Applied Biology 153:149-155. DOI: 10.1111/j.1744-7348.2008.00245.x No GLP Published	N		
Stobbs L., Greig N., Weaver S., Shipp L., Ferguson G	MP 6.6	2009	The potential role of native weed species and bumble bees ( <i>Bombus impatiens</i> ) on the epidemiology of <i>Pepino mosaic virus</i> . Canadian Journal of Plant Pathology 31:254-261 No GLP Published	N		
Stobbs L.W., Greig N.	MP 6.6	2014	First report of bumblebee ( <i>Bombus impatiens</i> Cresson) transmission of <i>Pepino mosaic virus</i> between tomato ( <i>Solanum lycopersicum</i> L.) and perennial climbing nightshade ( <i>Solanum dulcamara</i> L.). Canadian Journal of Plant Pathology 36:529-533. DOI: 10.1080/07060661.2014.954625 No GLP Published	N		
Van der Vlugt R.	MP 6.6	2009	<i>Pepino mosaic virus</i> . Hellenic Plant Protection Journal 2:47-56 No GLP Published	N		
Zhang X.-F., Qu F.	MP 3.2	2016	Cross protection of plant viruses: recent developments and mechanistic implications, in: A. Wang and X. Zhou (Eds.), Current Research Topics in Plant Virology Springer International Publishing, Cham. pp. 241-250 No GLP Published	N		

#### A.4. FURTHER INFORMATION

##### Annex IIM Data and Information

Data point	Author(s)	Year	Title Doc. No., (prev. used Doc. No.), (Report No.) Source (where different from company) GLP or GEP status, Published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner
B.4.2 B.4.3	Córdoba-Selles MC, García-Rández A, Alfaro-Fernández A, and Jordá-Fernández C	2007	Seed transmission of <i>Pepino mosaic virus</i> and efficacy of tomato seed disinfection treatments. Plant Disease 91:1250-1254 No GLP Published	N	N	-	LIT
B.4.2 B.4.3	Hull R.	2014	Plant virology. Chapter 16 pp 675-741 Academic press, San Diego, CA. No GLP Published	N	N	-	LIT
B.4.2 B.4.3	Ling KS	2010	Effectiveness of chemo- and thermotherapeutic treatments on <i>Pepino mosaic virus</i> in tomato seed. Plant Dis. 94:325-328. No GLP Published	N	N	-	LIT

Data point	Author(s)	Year	Title Doc. No., (prev. used Doc. No.), (Report No.) Source (where different from company) GLP or GEP status, Published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner
B.4.2 B.4.3	O'Neil T, Spence N, Mumford R, Skelton A,	2003	Final Report on project PC 181: Protected tomato: sources, survival and disinfection of <i>Pepino mosaic virus</i> (PepMV) ADAS/CSL, UK No GLP Published	N	N	-	LIT
B.4.1	Anonymous	-	AbioProtect® Safety data sheet  No GLP UnPublished	N	N		Abiopep S.L.

\*LIT: LITERATURE

**Annex IIIM Data and Information**

Data point	Author	Year	Title Doc. No., (prev. used Doc. No.), (Report No.) Source (where different from company) GLP or GEP status, Published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner
B.4.5 B.4.6.2	Córdoba-Selles MC, García- Rández A, Alfaro- Fernández A, and Jordá- Fernández C	2007	Seed transmission of Pepino mosaic virus and efficacy of tomato seed disinfection treatments. Plant Disease 91:1250-1254 No GLP Published	N	N		LIT
B.4.5 B.4.6.2	Hull R.	2014	Plant virology. Chapter 16 pp 675-741 Academic press, San Diego, CA. No GLP. Published.	N	N		LIT
B.4.5 B.4.6.2	Ling KS	2010	Effectiveness of chemo- and thermotherapeutic treatments on Pepino mosaic virus in tomato seed. Plant Dis. 94:325-328. No GLP Published	N	N		LIT
B.4.5 B.4.6.2	O'Neil T, Spence N, Mumford R, Skelton A,	2003	Final Report on project PC 181: Protected tomato: sources, survival and disinfection of Pepino mosaic virus (PepMV) ADAS/CSL, UK No GLP Published	N	N		LIT
B.4.4 B.4.5 B.4.6	Anonymous	-	AbioProtect® Safety data sheet  No GLP UnPublished	N	N		Abiopep S.L.

**A.5. METHODS OF ANALYSIS****Annex IIM Data and Information**

<b>Data Point</b>	<b>Author(s)</b>	<b>Year</b>	<b>Title Company Report No. Source (where different from company) GLP or GEP status Published or not</b>	<b>Vertebrate study Y/N</b>	<b>Data protection claimed Y/N</b>	<b>Justification if data protection is claimed</b>	<b>Owner</b>
B.5.1.1	Ling K.S.	2007	Molecular characterization of two <i>Pepino mosaic virus</i> variants from imported tomato seed reveals high levels of sequence identity between Chilean and US isolates. Virus Genes 34. DOI: 10.1007/s11262-006-0003-x. No GLP Published	N	N		LIT*
B.5.1.1	Maroon-Lango C.J., Guaragna M.A., Jordan R.L., Hammond J., Bandla M., Marquardt S.K.	2005	Two unique US isolates of <i>Pepino mosaic virus</i> from a limited source of pooled tomato tissue are distinct from a third (European-like) US isolate. Archives of Virology 150:1187-1201. DOI: 10.1007/s00705-005-0495-z. No GLP Published	N	N		LIT
B.5.1.1	Moreno-Pérez M.G., Pagán I., Aragón-Caballero L., Cáceres F., Fraile A., García-Arenal F.	2014	Ecological and genetic determinants of <i>Pepino mosaic virus</i> emergence. Journal of virology 88:3359-3368. No GLP Published	N	N		LIT
B.5.1.1	Van Der Vlugt R.A.A., Cuperus C., Vink J., Stijger I.C.M.M., Lesemann D.E., Verhoeven J.T.J., Roehorst J.W.	2002	Identification and characterization of <i>Pepino mosaic potyvirus</i> in tomato. EPPO Bulletin 32:503-508. DOI:10.1046/j.1365-2338.2002.00598.x. No GLP Published	N	N		LIT
B.5.2.1	Mehle N., Gutiérrez-Aguirre I., Prezelj N., Delić D., Vidic U., Ravnikar M.	2014	Survival and transmission of <i>Potato virus Y</i> , <i>Pepino mosaic virus</i> , and <i>Potato Spindle Tuber Viroid</i> in Water. Applied and Environmental Microbiology 80:1455-1462. DOI: 10.1128/aem.03349-13. Not GLP Published	N	N		LIT
B.5.2.1	O'Neil T., Spence N., Mumford R., Skelton A.	2003	Final Report on project PC 181: Protected tomato: sources, survival and disinfection of <i>Pepino mosaic virus</i> (PepMV), ADAS/CSL, UK.	N	N		LIT

Data Point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner
			No GLP Published				
B.5.2.1	Prats C.	2017a	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect®, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southern Spain, 2016). Agrocolor S.L., Spain Report Number ACEX/1274/AB GEP Not published	N	Y	Proprietary information	Abiopep S.L.
B.5.2.1	Prats C.	2017b	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect®, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southeast Spain, 2016). Agrocolor S.L., Spain Report number: ACEX/1277/AB GEP Not published	N	Y	Proprietary information	Abiopep S.L.

\*LIT: LITERATURE

**Annex IIIM Data and Information**

Data Point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner
B.5.1	Agüero J.	2017a	Method of production of the Microbial Pest Control Agent (MPCA) PepMV, EU strain, mild isolate Abp1 and PepMV, CH2 strain, mild isolate Abp2 and manufacturing of the Microbial Pest Control Product (MPCP). Abiopep S.L., Spain. No GLP Not published	N	N	Proprietary information	Abiopep S.L.
B.5.2	Mehle N., Gutiérrez-Aguirre I., Prezelj N., Delić D., Vidic U., Ravnikar M.	2014	Survival and transmission of Potato virus Y, Pepino mosaic virus, and Potato Spindle Tuber Viroid in Water. Applied and Environmental Microbiology 80:1455-1462. DOI: 10.1128/aem.03349-13. No GLP Published	N	N		LIT
B.5.2	O'Neil T., Spence N., Mumford R., Skelton A	2003	Final Report on project PC 181: Protected tomato: sources, survival and disinfection of Pepino mosaic virus (PepMV). ADAS/CSL, UK. No GLP Published	N	N		LIT
B.5.2	Prats C.	2017a	Field study to evaluate the crop	N	Y	Proprietary	Abiopep S.L.

Data Point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner
			safety and the efficacy of the Plant Protection Product (PPP) AbioProtect®, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southern Spain, 2016). Agrocolor S.L., Spain. Report Number ACEX/1274/AB GEP Not published			information	
B.5.2	Prats C.	2017b	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect®, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southeast Spain, 2016). Agrocolor S.L., Spain. Report number: ACEX/1277/AB GEP Not published	N	Y	Proprietary information	Abiopep S.L.

## A.6. EFFECTS ON HUMAN HEALTH

### Annex IIM Data and Information

Data Point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner
B6.1.1-01	Adams M., et al	2011	Family <i>Alphaflexiviridae</i> , in: A. King, et al. (Eds.), Virus taxonomy: ninth report of the International Committee on Taxonomy of Viruses, Elsevier Academic Press. pp. 904-909. No GLP Published	N	N		
B6.1.1-02	Agirrezabala X. et al	2015	The near-atomic cryoEM structure of a flexible filamentous plant virus shows homology of its coat protein with nucleoproteins of animal viruses. DOI: 10.7554/eLife.11795. No GLP Published	N	N		
B6.1.1-03	Suzek B.E. et al	2007	UniRef: comprehensive and non-redundant UniProt reference clusters. Bioinformatics 23:1282-1288. DOI: 10.1093/bioinformatics/btm098. No GLP Published	N	N		
B6.1.1-04	Colson P. et al.	2010	<i>Pepper mild mottle virus</i> , a plant virus associated with specific immune responses, fever, abdominal pains, and pruritus in humans. PloS one 5:e10041.	N	N		



			No GLP Published				
B6.1.1-05	Liu R. et al	2013	Humans have antibodies against a plant virus: evidence from <i>Tobacco mosaic virus</i> . PloS one 8:e60621. No GLP Published	N	N		
B6.1.1-06	Werkman A., Sansford C.	2010	Pest Risk Analysis for <i>Pepino mosaic virus</i> for the EU. Deliverable Report 4.3. EU Sixth Framework Project Project PEPEIRA. No GLP Published	N	N		
B6.1.1.2	Cabezas J.	2017	Study on the potential hazards to humans of using <i>Pepino mosaic virus</i> (PepMV) as a microbial biopesticide in greenhouse tomato crops. Instituto Murciano de Investigación Biosanitaria Virgen de la Arrixaca, Spain. No GLP Not published	N	Y	Proprietary information	Abiopep S.L.
B6.1.2.1	Welter S. et al	2013	<i>Pepino mosaic virus</i> infection of tomato affects allergen expression, but not the allergenic potential of fruits. PloS one 8:e65116. No GLP Published	N	N		
B6.1.2.2.1-01		2017a	Evaluation of the acute oral toxicity of the test item AbioProtect® (and its components Abp1 and Abp2) in female Sprague-Dawley rats by the acute toxic class method (OECD n° 423). Report number: B-02315. GLP Not published	Y	Y	Proprietary information	Abiopep S.L.
B6.1.2.2.2-01		2017	Acute inhalation toxicity of test item AbioProtect® (and its components Abp1 and Abp2) in Sprague Dawley rats: OECD N°403. Report number: B-02137. GLP Not published	Y	Y	Proprietary information	Abiopep S.L.
B6.1.2.2.3-01		2017b	Evaluation of the acute dermal toxicity of the test item AbioProtect® (and its components Abp1 and Abp2) in female and male Sprague-Dawley rats (OECD n° 402). Report number: B-02316. GLP Not published	Y	Y	Proprietary information	Abiopep S.L.
B6.1.2.3.1-01	Gómez R., Calvo F.	2017	Bacterial Reverse Mutation Test (OECD Guideline 471). AbioProtect® (Abp1 and Abp2). Vivotecnia Research S.L., Spain. Report number: B-02314 GLP Not published	N	Y	Proprietary information	Abiopep S.L.

B6.1.2.4-01/1	Žegura B., Novak M.	2017a	The effect of tomato leaves extract infected with naturally occurring mild isolates of <i>Pepino mosaic virus</i> (PepMV, EU, strain, mild isolate Abp1 and PepMV, CH2 strain, mild isolate Abp2) on viability and proliferation of human alveolar epithelial cells type 2 A549 determined with the MTT assay. Department of genetic toxicology and cancer biology. National Institute of Biology. Slovenia. Report number: 10G002-2017 GLP like protocols Not published	N	Y	Proprietary information	Abiopep S.L.
B6.1.2.4-01/2	Žegura B., Novak M.	2019a	The effect of tomato leaves extract infected with naturally occurring mild isolates of <i>Pepino mosaic virus</i> (PepMV, EU, strain, mild isolate Abp1 and PepMV, CH2 strain, mild isolate Abp2) independently on viability and proliferation of human alveolar epithelial cells type 2 A549 determined with the MTT assay. Department of genetic toxicology and cancer biology. National Institute of Biology. Slovenia. Report number: 10G007-2019 GLP like protocols Not published	N	Y	Proprietary information	Abiopep S.L.
B6.1.2.4-02/1	Žegura B. et al	2017b	Infectivity and replication of <i>Pepino mosaic virus</i> (PepMV, EU, strain, mild isolate Abp1 and PepMV, CH2 strain, mild isolate Abp2) in human alveolar epithelial cells type 2 A549. Department of genetic toxicology and cancer biology. National Institute of Biology. Slovenia. Report number: 10G003-2017 GLP like protocols Not published	N	Y	Proprietary information	Abiopep S.L.
B6.1.2.4-02/2	Žegura B. et al.	2019b	Infectivity and replication of <i>Pepino mosaic virus</i> (PepMV, EU, strain, mild isolate Abp1 and PepMV, CH2 strain, mild isolate Abp2) independently in human alveolar epithelial cells type 2 A549. Department of genetic toxicology and cancer biology. National Institute of Biology. Slovenia. Report number: 10G008-2019 GLP like protocols Not published	N	Y	Proprietary information	Abiopep S.L.
B6.1.2.5-01	Hanssen I.M. et al	2008	Genetic characterization of <i>Pepino mosaic virus</i> isolates from Belgian greenhouse tomatoes reveals genetic recombination. Eur J Plant Pathol 121. DOI: 10.1007/s10658-007-9255-0. No GLP Published	N	N		
B6.1.2.5-02	Hernando Y.	2017	Focused search of scientific peer review open literature for <i>Pepino mosaic virus</i> . CEBAS-CSIC, Murcia. Spain	N	N		

			No GLP Not published				
B6.1.2.5-03	Zhang T., et al	2006	RNA viral community in human feces: prevalence of plant pathogenic viruses. PLoS biology 4:e3. No GLP Published	N	N		

### Annex IIIM Data and Information

Data Point	Author(s)	Year	Title Company Report No. Source (where different from company) GLP or GEP status Published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner
B6.1.1	[REDACTED]	2017a	Evaluation of the acute oral toxicity of the test item AbioProtect® (and its components Abp1 and Abp2) in female Sprague-Dawley rats by the acute toxic class method (OECD n° 423)". [REDACTED] Report number B-02315. GLP Not published	Y	Y	Proprietary information	Abiopep S.L.
B6.1.2	[REDACTED]	2017	Acute inhalation toxicity of test item AbioProtect® (and its components Abp1 and Abp2) in Sprague Dawley rats: OECD N°403. [REDACTED] Report number: B-02317. GLP Not published	Y	Y	Proprietary information	Abiopep S.L.
B6.1.3	[REDACTED]	2017b	Evaluation of the acute dermal toxicity of the test item AbioProtect® (and its components Abp1 and Abp2) in female and male Sprague-Dawley rats (OECD n° 402)". [REDACTED] Report number: B-02316. GLP Not published	Y	Y	Proprietary information	Abiopep S.L.
B6.3	Cabezas J.	2017	Study on the potential hazards to humans of using <i>Pepino mosaic virus</i> (PepMV) as a microbial biopesticide in greenhouse tomato crops. Instituto Murciano de Investigación	N	Y	Proprietary information	Abiopep S.L.

			Biosanitaria Virgen de la Arrixaca, Spain. Not GLP Not published				
B6.4-01	Sheen S.J.	1988	Detection of nicotine in foods and plant materials. Journal of Food Science, 53 (5) 1572-1573 No GLP Published	N	N		
B6.4-02	Siegmund B. et al.	1999	Determination of the Nicotine Content of Various Edible Nightshades (Solanaceae) and Their Products and Estimation of the Associated Dietary Nicotine Intake Journal of Agricultural and Food Chemistry 47(8), 3113–3120 DOI: 10.1021/jf990089w No GLP Published	N	N		
B6.4-03	Veiga J.M. et al.	2018	Validation report Laboratorio Químico-Microbiológico No GLP Not published	N	Y	Proprietary information	Abiopep S.L.
B6.4-04	Pineda J.L.	2018a	Assay report: Chemical determination: Nicotine. Active substance PepMV, EU strain, mild isolate Abp1. Batch L-5-041017-Abp1-C Laboratorio Químico-Microbiológico JN/MUR/16215/18 No GLP Not published	N	Y	Proprietary information	Abiopep S.L.
B6.4-05	Pineda J.L.	2018b	Assay report: Chemical determination: Nicotine. Active substance PepMV, EU strain, mild isolate Abp1. Batch L-6-111017-Abp1-C Laboratorio Químico-Microbiológico JN/MUR/16216/18 No GLP Not published	N	Y	Proprietary information	Abiopep S.L.
B6.4-06	Pineda J.L.	2018c	Assay report: Chemical determination: Nicotine. Active substance PepMV, EU strain, mild isolate Abp1. Batch L-7-251017-Abp1-C Laboratorio Químico-Microbiológico	N	Y	Proprietary information	Abiopep S.L.

			JN/MUR/16217/18 No GLP Not published				
B6.4-07	Pineda J.L.	2018d	Assay report: Chemical determination: Nicotine. Active substance PepMV, EU strain, mild isolate Abp1. Batch L-8-081117-Abp1-C Laboratorio Químico-Microbiológico JN/MUR/16218/18 MO00 No GLP Not published	N	Y	Proprietary information	Abiopep S.L.
B6.4-08	Pineda J.L.	2018e	Assay report: Chemical determination: Nicotine. Active substance PepMV, EU strain, mild isolate Abp1. Batch L-9-221117-Abp1-C Laboratorio Químico-Microbiológico JN/MUR/16219/18 No GLP Not published	N	Y	Proprietary information	Abiopep S.L.
B6.4-09	Pineda J.L.	2018f	Assay report: Chemical determination: Nicotine. Active substance PepMV, CH strain, mild isolate Abp2. Batch L-5-041017-Abp2-C Laboratorio Químico-Microbiológico JN/MUR/16220/18 No GLP Not published	N	Y	Proprietary information	Abiopep S.L.
B6.4-10	Pineda J.L.	2018g	Assay report: Chemical determination: Nicotine. Active substance PepMV, CH strain, mild isolate Abp2. Batch L-6-111017-Abp2-C Laboratorio Químico-Microbiológico JN/MUR/16222/18 No GLP Not published	N	Y	Proprietary information	Abiopep S.L.
B6.4-11	Pineda J.L.	2018h	Assay report: Chemical determination: Nicotine. Active substance PepMV, CH strain, mild isolate Abp2. Batch L-7-251017-Abp2-C Laboratorio Químico-Microbiológico JN/MUR/16223/18 No GLP Not published	N	Y	Proprietary information	Abiopep S.L.
B6.4-12	Pineda J.L.	2018i	Assay report: Chemical	N	Y	Proprietary	Abiopep

			determination: Nicotine. Active substance PepMV, CH strain, mild isolate Abp2. Batch L-8-081117- Abp2-C Laboratorio Químico- Microbiológico JN/MUR/16224/18 No GLP Not published			information	S.L.
B6.4-13	Pineda J.L.	2018f	Assay report: Chemical determination: Nicotine. Active substance PepMV, CH strain, mild isolate Abp2. Batch L-9-221117- Abp2-C Laboratorio Químico- Microbiológico JN/MUR/16225/18 No GLP Not published	N	Y	Proprietary information	Abiopep S.L.
B6.4-14	Baños M.	2016	Physico-Chemical Characterization of technical Abp1 and Abp2 and formulation AbioProtect®. Laboratorios Munuera S.L., Spain Report number: 16-4951- 01 GLP Not published	N	Y	Proprietary information	Abiopep S.L.
B6.4-15	MacBride J.S. et al.	1988	Green tobacco sickness. Tobacco control 7: 294- 298 No GLP Published	N	N		
B6.4-16	Lindgren M. et al.	1999	Electroencephalographic effects of intravenous nicotine – a dose-response study. Psychopharmacology 145: 342 DOI: 10.1007/s002130051067 No GLP Published		N		

**A.7. RESIDUES IN OR ON TREATED PRODUCTS, FOOD AND FEED****Annex IIM Data and Information**

Data point	Author(s)	Year	Title Doc. No., (prev. used Doc. No.), (Report No.) Source (where different from company) GLP or GEP status, Published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner

**Annex IIM Data and Information**

Data point	Author(s)	Year	Title Doc. No., (prev. used Doc. No.), (Report No.) Source (where different from company) GLP or GEP status, Published or not	Vertebrate study Y/N	Data protection claimed Y/N	Justification if data protection is claimed	Owner

**A.8. FATE AND BEHAVIOUR IN THE ENVIRONMENT****Annex IIM Data and Information**

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
B 8.	Aguilar J., Hernandez-Gallardo M., Cenis J., Lacasa A., Aranda M.	2002	Complete sequence of the <i>Pepino mosaic virus</i> RNA genome. Archives of virology 147:2009-2015. No GLP Published	N		
B 8.	Cotillon A.C., Girard M., Ducouret S.	2002	Complete nucleotide sequence of the genomic RNA of a French isolate of <i>Pepino mosaic virus</i> (PepMV). Archives of Virology 147:2231-2238. DOI: 10.1007/s00705-002-0873-8 No GLP Published	N		
B 8.	French C. J., Bouthillier M., Bernardy M., Ferguson G., Sabourin M., Johnson R.C., Masters C., Godkin S., Mumford R.	2001	First report of <i>Pepino mosaic virus</i> in Canada and the United States. Plant Disease 85:1121. DOI: 10.1094/PDIS.2001.85.10.1121B No GLP Published	N		
B 8.	Gómez P., Sempere R., Elena S.F., Aranda M.A.	2009	Mixed infections of <i>Pepino mosaic virus</i> strains modulate the evolutionary dynamics of this emergent virus. Journal of Virology 83:12378-12387 No GLP Published	N		
B 8.	Hanssen I.M., Thomma B.P.H.J.	2010	Pepino mosaic virus: a successful pathogen that rapidly evolved from emerging to endemic in tomato crops. Molecular Plant Pathology 11:179-189. DOI: 10.1111/j.1364-3703.2009.00600.x. No GLP Published	N		

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
B 8.	Jones R.A.C., Koenig R., Lesemann D.	1980	Pepino mosaic virus, a new potexvirus from pepino ( <i>Solanum muricatum</i> ) Annals of Applied Biology 94:61-68 No GLP Published	N		
B 8.	Ling K.S.	2007	Molecular characterization of two <i>Pepino mosaic virus</i> variants from imported tomato seed reveals high levels of sequence identity between Chilean and US isolates. Virus Genes 34. DOI: 10.1007/s11262-006-0003-x. No GLP Published	N		
B 8.	Ling K.S., Wintermantel W.M., Bledsoe M	2008	Genetic composition of <i>Pepino mosaic virus</i> population in North American greenhouse tomatoes. Plant Disease 92:1683-1688. DOI: 10.1094/PDIS-92-12-1683. No GLP Published	N		
B 8.	Ling K.S., Li R., Bledsoe M.	2013	<i>Pepino mosaic virus</i> genotype shift in North America and development of a loop-mediated isothermal amplification for rapid genotype identification. Virology Journal 10. DOI: 10.1186/1743-422x-10-117 No GLP Published	N		
B 8.	López C., Soler S., Nuez F.	2005	Comparison of the complete sequences of three different isolates of <i>Pepino mosaic virus</i> : Size variability of the TGBp3 protein between tomato and <i>L. peruvianum</i> isolates. Archives of Virology 150:619-627. DOI: 10.1007/s00705-004-0438-0 No GLP Published	N		
B 8.	Maroon-Lago C.J., Guaragna M.A., Jordan R.L., Hammond J., Bandla M., Marquardt S.K.	2005	Two unique US isolates of <i>Pepino mosaic virus</i> from a limited source of pooled tomato tissue are distinct from a third (European-like) US isolate. Archives of Virology 150:1187-1201. DOI: 10.1007/s00705-005-0495-z No GLP Published	N		
B 8.	Moreno-Pérez M.G., Pagán I., Aragón-Caballero L., Cáceres F., Fraile A., García-Arenal F.	2014	Ecological and genetic determinants of <i>Pepino mosaic virus</i> emergence. Journal of virology 88:3359-3368. No GLP Published	N		
B 8.	Mumford and M R.A., Metcalfe E.J.	2001	The partial sequencing of the genomic RNA of a UK isolate of <i>Pepino mosaic virus</i> and the comparison of the coat protein sequence with other isolates from Europe and Peru. Archives of Virology 146. DOI: 10.1007/s007050170015. No GLP Published	N		
B 8.	Pagan I., Córdoba-Sellés M.d.C., Martínez-Priego L., Fraile A., Malpica J.M., Jordá C., García-Arenal F.	2006	Genetic structure of the population of <i>Pepino mosaic virus</i> infecting tomato crops in Spain. Phytopathology 96:274-279 No GLP Published	N		
B 8.	Pospieszny H., Hasiów B.,	2008	Characterization of two distinct Polish isolates of <i>Pepino mosaic virus</i> .	N		



Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
	Borodynko N.		European Journal of Plant Pathology 122. DOI: 10.1007/s10658-008-9280-7 No GLP Published			
B 8. B 8.1	Roggero P., Masenga V., Lenzi R., Coghe F., Ena S., Winter S.	2001	First report of <i>Pepino mosaic virus</i> in tomato in Italy. Plant Disease 3 No GLP Published	N		
B 8. B 8.1	Soler S., Prohens J., Díez M.J., Nuez F.	2002	Natural occurrence of <i>Pepino mosaic virus</i> in <i>Lycopersicon</i> species in central and southern Peru. Journal of Phytopathology 150:49-53. DOI: 10.1046/j.1439-0434.2002.00712.x. No GLP Published	N		
B 8. B 8.1	van der Vlugt R.A.A., Stijger C.C.M.M., Verhoeven J.T.J., Lesemann D.E.	2000	First Report of <i>Pepino Mosaic Virus</i> on Tomato. Plant Disease 84:103. DOI: 10.1094/PDIS.2000.84.1.103C. No GLP Published	N		
B 8.1	Agrios	2005	Plant diseases caused by virus. Plant Pathology. Fifth Edition. Chapter 14, pp 722-820 (pp731) Elsevier Academia Press No GLP Published	N		
B 8.1 B. 8.1/01 (K-MA 7.1/01)	Agüero J.	2017b	Study of the presence of <i>Pepino mosaic virus</i> (PepMV) on alternative and potential non-tomato host plants. Abiopep S.L., Spain Report number ABP03/2017 No GLP Not published	N		Abiopep S.L.
B 8.1	Córdoba M.C., Martínez-Priego L., Jordá C	2004	New natural hosts of <i>Pepino mosaic virus</i> in Spain. Plant Disease 88:906. DOI: 10.1094/PDIS.2004.88.8.906D No GLP Published	N		
B 8.1	Jordá C., Perez A.L., Martínez-Culebras P., Abad P., Lacasa A., Guerrero M.	2001	First report of <i>Pepino mosaic virus</i> on tomato in Spain. Plant Disease 85:1292 No GLP Published	N		
B 8.1	Kazinczi G., Takacs A., Horvath J., Gaborjanyi R., Beres I.	2005	Susceptibility of some weed species to <i>Pepino mosaic virus</i> (PepMV). Communications in agricultural and applied biological sciences 70:489-491 No GLP Published	N		
B 8.1	Mehle N., Gutiérrez-Aguirre I., Prezelj N., Delić D., Vidic U., Ravnikar M.	2014	Survival and transmission of <i>Potato virus Y</i> , <i>Pepino mosaic virus</i> , and <i>Potato Spindle Tuber Viroid</i> in Water. Applied and Environmental Microbiology 80:1455-1462. DOI: 10.1128/aem.03349-13 No GLP Published	N		
B 8.1	Papayiannis L.C., Kokkinos C.D., Alfaro-Fernández A.	2012	Detection, characterization and host range studies of <i>Pepino mosaic virus</i> in Cyprus. European Journal of Plant Pathology 132:1-7. DOI: 10.1007/s10658-011-9854-7 No GLP Published	N		

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
B 8.1	Salomone A., Roggero P.	2002	Host range, seed transmission and detection by ELISA and lateral flow of an Italian isolate of Pepino mosaic virus. Journal of Plant Pathology:65-68 No GLP Published	N		
B 8.1	Schwarz D., Beuch U., Bandte M., Fakhro A., Büttner C., Obermeier C.	2010	Spread and interaction of <i>Pepino mosaic virus</i> (PepMV) and <i>Pythium aphanidermatum</i> in a closed nutrient solution recirculation system: effects on tomato growth and yield. Plant Pathology 59:443-452. DOI: 10.1111/j.1365-3059.2009.02229.x No GLP Published	N		
B 8.1	Spence N.J., Basham J., Mumford R.A., Hayman G., Edmondson R., Jones D.R.	2006	Effect of <i>Pepino mosaic virus</i> on the yield and quality of glasshouse-grown tomatoes in the UK. Plant Pathology 55:595-606. DOI: 10.1111/j.1365-3059.2006.01406.x. No GLP Published	N		
B 8.1	Stobbs L., Greig N., Weaver S., Shipp L., Ferguson G	2009	The potential role of native weed species and bumble bees ( <i>Bombus impatiens</i> ) on the epidemiology of <i>Pepino mosaic virus</i> . Canadian Journal of Plant Pathology 31:254-261 No GLP Published	N		
B 8.1	van der Vlugt R.	2009	<i>Pepino mosaic virus</i> . Hellenic Plant Protection Journal 2:47-56 No GLP Published	N		
B 8.1	Wright D., Mumford R.	1999	<i>Pepino mosaic Potexvirus</i> (PepMV): first records in tomato in the United Kingdom Central Science Laboratory. No GLP Published	N		
B 8.1.1 <b>B.8.1.1/01</b> (K-MP 6.2/05)	Prats C.	2017b	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect®, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southeast Spain, 2016). Agrocolor S.L., Spain. Report number: ACEX/1277/AB GEP Not published	Y	Proprietary information	Abiopep S.L.
B 8.1.1 <b>B.8.1.1/02</b> (K-MA 7.1.1/02)	Céspedes A.J.	2015	Evaluación de diferentes desinfectantes con y sin solarización para la desinfección de sacos de sustrato de fibra de coco de un cultivo de tomate inoculado con PePMV. Estación Experimental Las Palmerillas (El Ejido, Almería), Spain. Fundación Cajamar Report number: LPA/2014-23/S GEP Not published	N		
B 8.1.2 <b>B.8.1.2/01</b> (K-MP 6.2/04)	Prats C.	2017a	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect®, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southern Spain, 2016). Agrocolor S.L., Spain. Report Number ACEX/1274/AB GEP Not published	Y	Proprietary information	Abiopep S.L.

### Annex IIIM Data and Information

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
B 8	Aguilar J., Hernandez- Gallardo M., Cenis J., Lacasa A., Aranda M.	2002	Complete sequence of the <i>Pepino mosaic virus</i> RNA genome. Archives of virology 147:2009-2015. No GLP Published	N		
B 8	Cotillon A.C., Girard M., Ducouret S.	2002	Complete nucleotide sequence of the genomic RNA of a French isolate of <i>Pepino mosaic virus</i> (PepMV). Archives of Virology 147:2231-2238. DOI: 10.1007/s00705-002-0873-8 No GLP Published	N		
B 8	French C. J., Bouthillier M., Bernardy M., Ferguson G., Sabourin M., Johnson R.C., Masters C., Godkin S., Mumford R.	2001	First report of <i>Pepino mosaic virus</i> in Canada and the United States. Plant Disease 85:1121. DOI: 10.1094/PDIS.2001.85.10.1121B No GLP Published	N		
B 8	Gómez P. Sempere R., Elena S.F. Aranda M.A.	2009	Mixed infections of <i>Pepino mosaic virus</i> strains modulate the evolutionary dynamics of this emergent virus. Journal of Virology 83:12378-12387 No GLP Published	N		
B 8	Hanssen I.M., Thomma B.P.H.J.	2010	<i>Pepino mosaic virus</i> : a successful pathogen that rapidly evolved from emerging to endemic in tomato crops. Molecular Plant Pathology 11:179-189. DOI: 10.1111/j.1364-3703.2009.00600.x. No GLP Published	N		
B 8	Jones R.A.C., Koenig R., Leseemann D.	1980	<i>Pepino mosaic virus</i> , a new potexvirus from pepino ( <i>Solanum muricatum</i> ) Annals of Applied Biology 94:61-68 No GLP Published	N		
B 8	Ling K.S.	2007	Molecular characterization of two <i>Pepino mosaic virus</i> variants from imported tomato seed reveals high levels of sequence identity between Chilean and US isolates. Virus Genes 34. DOI: 10.1007/s11262-006-0003-x. No GLP Published	N		
B 8	Ling K.S., Wintermantel W.M., Bledsoe M	2008	Genetic composition of <i>Pepino mosaic virus</i> population in North American greenhouse tomatoes. Plant Disease 92:1683-1688. DOI: 10.1094/PDIS-92-12-1683. No GLP Published	N		
B 8	Ling K.S., Li R., Bledsoe M.	2013	<i>Pepino mosaic virus</i> genotype shift in North America and development of a loop-mediated isothermal amplification for rapid genotype identification. Virology Journal 10. DOI: 10.1186/1743-422x-10-117 No GLP	N		

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
			Published			
B 8	López C., Soler S., Nuez F.	2005	Comparison of the complete sequences of three different isolates of <i>Pepino mosaic virus</i> : Size variability of the TGBp3 protein between tomato and <i>L. peruvianum</i> isolates. Archives of Virology 150:619-627. DOI: 10.1007/s00705-004-0438-0 No GLP Published	N		
B 8	Maroon-Lago C.J., Guaragna M.A., Jordan R.L., Hammond J., Bandla M., Marquardt S.K.	2005	Two unique US isolates of <i>Pepino mosaic virus</i> from a limited source of pooled tomato tissue are distinct from a third (European-like) US isolate. Archives of Virology 150:1187-1201. DOI: 10.1007/s00705-005-0495-z No GLP Published	N		
B 8	Moreno-Pérez M.G., Pagán I., Aragón-Caballero L., Cáceres F., Fraile A., García-Arenal F.	2014	Ecological and genetic determinants of <i>Pepino mosaic virus</i> emergence. Journal of virology 88:3359-3368. No GLP Published	N		
B 8	Mumford and M R.A., Metcalfe E.J.	2001	The partial sequencing of the genomic RNA of a UK isolate of <i>Pepino mosaic virus</i> and the comparison of the coat protein sequence with other isolates from Europe and Peru. Archives of Virology 146. DOI: 10.1007/s007050170015. No GLP Published	N		
B 8	Pagan I., Córdoba-Sellés M.d.C., Martínez-Priego L., Fraile A., Malpica J.M., Jordá C., García-Arenal F.	2006	Genetic structure of the population of <i>Pepino mosaic virus</i> infecting tomato crops in Spain. Phytopathology 96:274-279 No GLP Published	N		
B 8	Pospieszny H., Hasiów B., Borodynko N.	2008	Characterization of two distinct Polish isolates of <i>Pepino mosaic virus</i> . European Journal of Plant Pathology 122. DOI: 10.1007/s10658-008-9280-7 No GLP Published	N		
B 8 MA 7.1	Roggero P., Masenga V., Lenzi R., Coghe F., Ena S., Winter S.	2001	First report of <i>Pepino mosaic virus</i> in tomato in Italy. Plant Disease 3 No GLP Published	N		
B 8 B 8.1	Soler S., Prohens J., Díez M.J., Nuez F.	2002	Natural occurrence of <i>Pepino mosaic virus</i> in <i>Lycopersicon</i> species in central and southern Peru. Journal of Phytopathology 150:49-53. DOI: 10.1046/j.1439-0434.2002.00712.x. No GLP Published	N		
B 8 B 8.1	van der Vlugt R.A.A., Stijger C.C.M.M., Verhoeven J.T.J., Lesemann D.E.	2000	First Report of <i>Pepino Mosaic Virus</i> on Tomato. Plant Disease 84:103. DOI: 10.1094/PDIS.2000.84.1.103C. No GLP Published	N		
B 8.1	Agrios	2005	Plant diseases caused by virus. Plant Pathology. Fifth Edition. Chapter 14, pp 722-820 (pp731) Elsevier Academia Press No GLP Published	N		
B 8.1 B. 8.1/01 (K-MA)	Agüero J.	2017b	Study of the presence of <i>Pepino mosaic virus</i> (PepMV) on alternative and potential non-tomato host plants.	N		Abiopep S.L.

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
7.1/01)			Abiopep S.L., Spain Report number ABP03/2017 No GLP Not published			
B 8.1	Córdoba M.C., Martínez-Priego L., Jordá C	2004	New natural hosts of <i>Pepino mosaic virus</i> in Spain. Plant Disease 88:906. DOI: 10.1094/PDIS.2004.88.8.906D No GLP Published	N		
B 8.1	Jordá C., Perez A.L., Martínez-Culebras P., Abad P., Lacasa A., Guerrero M.	2001	First report of <i>Pepino mosaic virus</i> on tomato in Spain. Plant Disease 85:1292 No GLP Published	N		
B 8.1	Kazinczi G., Takacs A., Horvath J., Gaborjanyi R., Beres I.	2005	Susceptibility of some weed species to Pepino mosaic virus (PepMV). Communications in agricultural and applied biological sciences 70:489-491 No GLP Published	N		
B 8.1	Mehle N., Gutiérrez-Aguirre I., Prezelj N., Delić D., Vidic U., Ravnikar M.	2014	Survival and transmission of <i>Potato virus Y</i> , <i>Pepino mosaic virus</i> , and Potato Spindle Tuber Viroid in Water. Applied and Environmental Microbiology 80:1455-1462. DOI: 10.1128/aem.03349-13 No GLP Published	N		
B 8.1	Papayiannis L.C., Kokkinos C.D., Alfaro-Fernández A.	2012	Detection, characterization and host range studies of <i>Pepino mosaic virus</i> in Cyprus. European Journal of Plant Pathology 132:1-7. DOI: 10.1007/s10658-011-9854-7 No GLP Published	N		
B 8.1	Salomone A., Roggero P.	2002	Host range, seed transmission and detection by ELISA and lateral flow of an Italian isolate of Pepino mosaic virus. Journal of Plant Pathology:65-68 No GLP Published	N		
B 8.1	Schwarz D., Beuch U., Bandte M., Fakhro A., Büttner C., Obermeier C.	2010	Spread and interaction of <i>Pepino mosaic virus</i> (PepMV) and <i>Pythium aphanidermatum</i> in a closed nutrient solution recirculation system: effects on tomato growth and yield. Plant Pathology 59:443-452. DOI: 10.1111/j.1365-3059.2009.02229.x No GLP Published	N		
B 8.1	Spence N.J., Basham J., Mumford R.A., Hayman G., Edmondson R., Jones D.R.	2006	Effect of <i>Pepino mosaic virus</i> on the yield and quality of glasshouse-grown tomatoes in the UK. Plant Pathology 55:595-606. DOI: 10.1111/j.1365-3059.2006.01406.x. No GLP Published	N		
B 8.1	Stobbs L., Greig N., Weaver S., Shipp L., Ferguson G	2009	The potential role of native weed species and bumble bees ( <i>Bombus impatiens</i> ) on the epidemiology of <i>Pepino mosaic virus</i> . Canadian Journal of Plant Pathology 31:254-261 No GLP Published	N		
B 8.1	van der Vlugt R.	2009	<i>Pepino mosaic virus</i> . Hellenic Plant Protection Journal 2:47-56 No GLP Published	N		
B 8.1	Wright D.,	1999	<i>Pepino mosaic Potexvirus</i> (PepMV): first records	N		

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
	Mumford R.		in tomato in the United Kingdom Central Science Laboratory. No GLP Published			
B 8.1.1 <b>B.8.1.1/01</b> (K-MP 6.2/05)	Prats C.	2017b	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect®, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southeast Spain, 2016). Agrocolor S.L., Spain. Report number: ACEX/1277/AB GEP Not published	Y	Proprietary information	Abiopep S.L.
B 8.1.1 <b>B.8.1.1/02</b> (K-MA 7.1.1/02)	Céspedes A.J.	2015	Evaluación de diferentes desinfectantes con y sin solarización para la desinfección de sacos de sustrato de fibra de coco de un cultivo de tomate inoculado con PePMV. Estación Experimental Las Palmerillas (El Ejido, Almería), Spain. Fundación Cajamar Report number: LPA/2014-23/S GEP Not published	N		
B 8.1.2 <b>B.8.1.2/01</b> (K-MP 6.2/04)	Prats C.	2017a	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect®, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southern Spain, 2016). Agrocolor S.L., Spain. Report Number ACEX/1274/AB GEP Not published	Y	Proprietary information	Abiopep S.L.

## A.9. EFFECTS ON NON-TARGET ORGANISM

### Annex IIM and IIM Data and Information

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
MA 9 MA 8.3	Spence N.J., Basham J., Mumford R.A., Hayman G., Edmondson R., Jones D.R.	2006	Effect of <i>Pepino mosaic virus</i> on the yield and quality of glasshouse-grown tomatoes in the UK. Plant Pathology 55:595-606. DOI: 10.1111/j.1365-3059.2006.01406.x. No GLP Published	N		
MA 9 MA 8.3	Van der Vlugt R.	2009	<i>Pepino mosaic virus</i> . Hellenic Plant Protection Journal 2:47-56 No GLP Published	N		
MA 8 MA 8.3	Wright D., Mumford R.	1999	<i>Pepino mosaic Potexvirus</i> (PepMV): first records in tomato in the United Kingdom Central Science Laboratory. No GLP Published	N		
MA 9 MA 8.3	Agrios	2005	Plant diseases caused by viruses. Plant Pathology. Fifth Edition. Chapter 14, pp 722-820 (pp731) Elsevier Academia Press. No GLP Published	N		
MA 9 MA 9.2.1 MA 9.2.2	Hernando Y. <b>K-MA 5.2-5</b>	2017	Focused search of scientific peer review literature for <i>Pepino mosaic virus</i> . CEBAS-CSIC, Spain			

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
MA 9.2.3 MA 8.3 MA 8.4 MA 8.6			No GLP Not published			
MA 9	Colson P., Richet H., Desnues C., Balique F., Moal V., Grob J.-J., Berbis P., Lecoq H., Harlé J.-R., Berland Y	2010	<i>Pepper mild mottle virus</i> , a plant virus associated with specific immune responses, fever, abdominal pains, and pruritus in humans. PloS one 5:e10041. No GLP Published	N		
MA 9	Zhang T., Breitbart M., Lee W.H., Run J.-Q., Wei C.L., Soh S.W.L., Hibberd M.L., Liu E.T., Rohwer F., Ruan Y.	2006	RNA viral community in human feces: prevalence of plant pathogenic viruses. PLoS biology 4:e3. No GLP Published	N		
MA 9	Liu R., Vaishnav R.A., Roberts A.M., Friedland R.P.	2013	Humans have antibodies against a plant virus: evidence from <i>Tobacco mosaic virus</i> . PloS one 8:e60621. No GLP Published	N		
MA 9.2	Žegura B., Novak M., Kogovšek P. <b>K-MA5.2.4-02</b>	2017	Infectivity and replication of <i>Pepino mosaic virus</i> (PepMV, EU, strain, mild isolate Abp1 and PepMV, CH2 strain, mild isolate Abp2) in human alveolar epithelial cells type 2 A549. Department of genetic toxicology and cancer biology. National Institute of Biology. Slovenia. Report number: 10G003-2017 GLP like protocols Not published	Y	Proprietary information	Abiopep S.L.
MA 9.2	Žegura B., Novak M. <b>K-MA5.2.4-01</b>	2017	The effect of tomato leaves extract infected with naturally occurring mild isolates of <i>Pepino mosaic virus</i> (PepMV, EU, strain, mild isolate Abp1 and PepMV, CH2 strain, mild isolate Abp2) on viability and proliferation of human alveolar epithelial cells type 2 A549 determined with the MTT assay. Department of genetic toxicology and cancer biology. National Institute of Biology. Slovenia. Report number: 10G002-2017 GLP like protocols Not published	Y	Proprietary information	Abiopep S.L.
MA 9.2	Schwarz D., Beuch U., Bandte M., Fakhro A., Büttner C., Obermeier C.	2010	Spread and interaction of <i>Pepino mosaic virus</i> (PepMV) and <i>Pythium aphanidermatum</i> in a closed nutrient solution recirculation system: effects on tomato growth and yield. Plant Pathology 59:443-452. DOI: 10.1111/j.1365-3059.2009.02229.x No GLP Published	N		
MA 9.2	Mehle N., Gutiérrez-Aguirre I., Prezelj N., Delić D., Vidic U., Ravnkar M.	2014	Survival and transmission of <i>Potato virus Y</i> , <i>Pepino mosaic virus</i> , and Potato spindle tuber viroid in water. Applied and Environmental Microbiology 80:1455-1462. DOI: 10.1128/aem.03349-13 No GLP Published			
MA 9.2	Bandte M., Rodriguez M.H., Schuch I., Schmidt U., Buettner C.	2016	Plant viruses in irrigation water: reduced dispersal of viruses using sensor-based disinfection. Irrigation Science 34:221-229. DOI: 10.1007/s00271-016-0500-1 No GLP Published	N		
MA 9.2	Prats C.	2017a	Field study to evaluate the crop safety and the	Y	Proprietary	Abiopep

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
	<b>K-MP6.2-04</b>		efficacy of the Plant Protection Product (PPP) AbioProtect®, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southern Spain, 2016). Agrocolor S.L., Spain. Report Number ACEX/1274/AB GEP Not published		information	S.L.
MA 9.2.3	Schuster K-MA 8.2.3-01	2017a	AbioProtect® and its components PepMV-Abp1 and PepMV-Abp2: Toxicity to the single cell green alga <i>Pseudokirchneriella subcapitata</i> Hindák under laboratory conditions. Eurofins Agroscience Services EcoChem, Germany. Report number: S17-03474 GLP Not published	Y	Proprietary information	Abiopep S.L.
MA 8.2.4	Schuster K-MA 8.2.4-01	2017b	AbioProtect® and its components PepMV-Abp1 and PepMV-Abp2: Toxicity to the duckweed <i>Lemna gibba</i> under laboratory conditions (Acute Test – Static). Eurofins Agroscience Services EcoChem, Germany. Report number: S17-03475 GLP Not published	Y	Proprietary information	Abiopep S.L.
MA 8.3	Lacasa A., Guerrero Díaz M.M., Hita I., Martínez M.A., Jordá C., Bielza P., Contreras J., Alcázar A., Cano A.	2003	Implicaciones de los abejorros ( <i>Bombus</i> spp.) en la dispersión del virus del mosaico del pepino dulce (Pepino mosaic virus) en cultivos de tomate. Boletín de sanidad vegetal. Plagas 29 No GLP Published			
MA 8.3	Shipp J.L., Buitenhuis R., Stobbs L., Wang K., Kim W.S., Ferguson G	2008	Vectoring of Pepino mosaic virus by bumble-bees in tomato greenhouses. Annals of Applied Biology 153:149-155. DOI: 10.1111/j.1744-7348.2008.00245.x No GLP Published	N		
MA 8.3	Stobbs L., Greig N., Weaver S., Shipp L., Ferguson G	2009	The potential role of native weed species and bumble bees ( <i>Bombus impatiens</i> ) on the epidemiology of Pepino mosaic virus. Canadian Journal of Plant Pathology 31:254-261 No GLP Published	N		
MA 8.3	Stobbs L.W., Greig N.	2014	First report of bumblebee ( <i>Bombus impatiens</i> Cresson) transmission of Pepino mosaic virus between tomato ( <i>Solanum lycopersicum</i> L.) and perennial climbing nightshade ( <i>Solanum dulcamara</i> L.). Canadian Journal of Plant Pathology 36:529-533. DOI: 10.1080/07060661.2014.954625 No GLP Published	N		
MA 8.3	De Medeiros R.B., Figueiredo J., Resende R.d.O., De Avila A.C.	2005	Expression of a viral polymerase-bound host factor turns human cell lines permissive to a plant- and insect-infecting virus. Proceedings of the National Academy of Sciences of the United States of America 102:1175-1180. DOI: 10.1073/pnas.0406668102 No GLP Published	N		
MA 8.3	Li J.L., Cornman R.S., Evans J.D., Pettis J.S., Zhao Y., Murphy C., Peng W.J., Wu	2014	Systemic spread and propagation of a plant-pathogenic virus in European honeybees, <i>Apis mellifera</i> . mBio 5. DOI: 10.1128/mBio.00898-13 No GLP	N		



Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
	J., Hamilton M., Boncristiani H.F., Zhou L., Hammond J., Chen Y.P.		Published			
MA 8.3	Miller W.A., Carrillo-Tripp J., Bonning B.C., Dolezal A.G., Toth A.L.	2014	Conclusive evidence of replication of a plant virus in honeybees is lacking. mBio 5(3):e00985-14. doi:10.1128/mBio.00985-14 No GLP Published	N		
MA 8.4	Noël P., Hance T., Bragard C.	2014	Transmission of the Pepino mosaic virus by whitefly. European Journal of Plant Pathology 138:23-27. DOI: 10.1007/s10658-013-0313-5. No GLP Published	N		
MA 8.6	Alfaro- Fernández A., Del Carmen Córdoba-Sellés M., Herrera- Vásquez José Á., Cebrián M.d.C., Jordá C.	2010	Transmission of Pepino mosaic virus by the fungal vector Olpidium virulentus. Journal of Phytopathology 158:217-226. DOI: 10.1111/j.1439-0434.2009.01605.x No GLP Published	N		

## A.10. SUMMARY AND EVALUATION OF ENVIRONMENTAL IMPACT

### Annex IIM and IIM Data and Information

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
B 10.1 B 10.2	Agrios	2005	Plant diseases caused by virus. Plant Pathology. Fifth Edition. Chapter 14, pp 722-820 (pp731) Elsevier Academia Press No GLP Published	N		
B 10.1 <b>K-MA 7.1/01</b>	Agüero J.	2017b	Study of the presence of Pepino mosaic virus (PepMV) on alternative and potential non-tomato host plants. Abiopep S.L., Spain Report number: ABP03/2017 No GLP Not published	N		Abiopep S.L.
B 10.1 <b>K-MA 7.1.1/02</b>	Céspedes A.	2015	Evaluación de diferentes desinfectantes con y sin solarización para la desinfección de sacos de sustrato de fibra de coco de un cultivo de tomate inoculado con PePMV. Estación Experimental Las Palmerillas (El Ejido, Almería), Spain. Fundación Cajamar Report number: LPA/2014-23/S GEP Not published	N		
B 10.1	Córdoba M.C., Martínez- Priego L., Jordá C	2004	New natural hosts of <i>Pepino mosaic virus</i> in Spain. Plant Disease 88:906. DOI: 10.1094/PDIS.2004.88.8.906D No GLP Published	N		

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
B 10.1	Gómez P. Sempere R., Elena S.F. Aranda M.A.	2009	Mixed infections of <i>Pepino mosaic virus</i> strains modulate the evolutionary dynamics of this emergent virus. Journal of Virology 83:12378-12387 No GLP Published	N		
B 10.1	Hanssen I.M., Thomma B.P.H.J.	2010	Pepino mosaic virus: a successful pathogen that rapidly evolved from emerging to endemic in tomato crops. Molecular Plant Pathology 11:179-189. DOI: 10.1111/j.1364-3703.2009.00600.x. No GLP Published	N		
B 10.1	Jordá C., Perez A.L., Martínez-Culebras P., Abad P., Lacasa A., Guerrero M.	2001	First report of <i>Pepino mosaic virus</i> on tomato in Spain. Plant Disease 85:1292 No GLP Published	N		
B 10.1	Ling K.S., Li R., Bledsoe M.	2013	<i>Pepino mosaic virus</i> genotype shift in North America and development of a loop-mediated isothermal amplification for rapid genotype identification. Virology Journal 10. DOI: 10.1186/1743-422x-10-117 No GLP Published	N		
B 10.1	Mehle N., Gutiérrez-Aguirre I., Prezelj N., Delić D., Vidic U., Ravnikar M.	2014	Survival and transmission of <i>Potato virus Y</i> , <i>Pepino mosaic virus</i> , and Potato Spindle Tuber Viroid in Water. Applied and Environmental Microbiology 80:1455-1462. DOI: 10.1128/aem.03349-13 No GLP Published	N		
B 10.1	Papayiannis L.C., Kokkinos C.D., Alfaro-Fernández A.	2012	Detection, characterization and host range studies of <i>Pepino mosaic virus</i> in Cyprus. European Journal of Plant Pathology 132:1-7. DOI: 10.1007/s10658-011-9854-7 No GLP Published	N		
B 10.1 <b>K-MP 6.2/05</b>	Prats C.	2017b	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southeast Spain, 2016). Agrocolor S.L. Report number: ACEX/1277/AB GEP Not published	Y	Proprietary information	Abiopep S.L.
B 10.1 <b>K-MP 6.2/04</b>	Prats C.	2017a	Field study to evaluate the crop safety and the efficacy of the Plant Protection Product (PPP) AbioProtect, and its components or agents (PPA1 and PPA2), for the control of PepMV in tomato crop (Southern Spain, 2016). Agrocolor S.L. Report Number ACEX/1274/AB GEP Not published	Y	Proprietary information	Abiopep S.L.
B 10.1	Schwarz D., Beuch U., Bandte M., Fakhro A., Büttner C., Obermeier C.	2010	Spread and interaction of Pepino mosaic virus (PepMV) and <i>Pythium aphanidermatum</i> in a closed nutrient solution recirculation system: effects on tomato growth and yield. Plant Pathology 59:443-452. DOI: 10.1111/j.1365-3059.2009.02229.x No GLP	N		

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
			Published			
B 10.1	Soler S., Prohens J., Diez M.J., Nuez F.	2002	Natural occurrence of <i>Pepino mosaic virus</i> in <i>Lycopersicon</i> species in central and southern Peru. Journal of Phytopathology 150:49-53. DOI: 10.1046/j.1439-0434.2002.00712.x. No GLP Published	N		
B 10.1	Spence N.J., Basham J., Mumford R.A., Hayman G., Edmondson R., Jones D.R.	2006	Effect of <i>Pepino mosaic virus</i> on the yield and quality of glasshouse-grown tomatoes in the UK. Plant Pathology 55:595-606. DOI: 10.1111/j.1365-3059.2006.01406.x. No GLP Published	N		
B 10.1 B 10.2	Stobbs L., Greig N., Weaver S., Shipp L., Ferguson G	2009	The potential role of native weed species and bumble bees ( <i>Bombus impatiens</i> ) on the epidemiology of <i>Pepino mosaic virus</i> . Canadian Journal of Plant Pathology 31:254-261 No GLP Published	N		
B 10.1	Van der Vlugt R.	2009	<i>Pepino mosaic virus</i> . Hellenic Plant Protection Journal 2:47-56 No GLP Published	N		
B 10.1	Wright D., Mumford R.	1999	<i>Pepino mosaic Potexvirus</i> (PepMV): first records in tomato in the United Kingdom Central Science Laboratory. No GLP Published	N		
B 10.2	Colson P., Richet H., Desnues C., Balique F., Moal V., Grob J.-J., Berbis P., Lecoq H., Harlé J.-R., Berland Y	2010	<i>Pepper mild mottle virus</i> , a plant virus associated with specific immune responses, fever, abdominal pains, and pruritus in humans. PloS one 5:e10041. No GLP Published	N		
B 10.2	Alfaro- Fernández A., Del Carmen Córdoba- Sellés M., Herrera- Vásquez José Á., Cebrián M.d.C., Jordá C.	2010	Transmission of <i>Pepino mosaic virus</i> by the fungal vector <i>Olpidium virulentus</i> . Journal of Phytopathology 158:217-226. DOI: 10.1111/j.1439-0434.2009.01605.x No GLP Published	N		
B 10.2 <b>K-MA 5.2.5</b>	Hernando Y.	2017	Focused search of scientific peer review literature for <i>Pepino mosaic virus</i> . CEBAS-CSIC, Murcia. Spain No GLP Not published	N		
B 10.2	Liu R., Vaishnav R.A., Roberts A.M., Friedland R.P.	2013	Humans have antibodies against a plant virus: evidence from <i>Tobacco mosaic virus</i> . PloS one 8:e60621. No GLP Published	N		
B 10.2	Noël P., Hance T.,	2014	Transmission of the <i>Pepino mosaic virus</i> by whitefly. European Journal of Plant Pathology	N		

Data point	Author(s)	Year	Title Source (where different from company) Company, Report Number GLP or GEP status Published or not	Data Protection claimed Y/N	Justification if data protection is claimed	Owner
	Bragard C.		138:23-27. DOI: 10.1007/s10658-013-0313-5. No GLP Published			
B 10.2 K-MA 8.2.3/01	Schuster A.K.	2017a	AbioProtect® and its components PepMV-Abp1 and PepMV-Abp2: Toxicity to the Single Cell Green Alga <i>Pseudokirchneriella subcapitata</i> Hindák under Laboratory Conditions. Eurofins Agrosience Services EcoChem. Report number: S17-03474 GLP Not published	Y	Proprietary information	Abiopep S.L.
B 10.2 K-MA 8.2.4/01	Schuster A.K.	2017b	AbioProtect® and its components PepMV-Abp1 and PepMV-Abp2: Toxicity to the Duckweed <i>Lemna gibba</i> under Laboratory Conditions (Acute Test – Static). Report number: S17-03475 GLP Not published	Y	Proprietary information	Abiopep S.L.
B 10.2	Shipp J.L., Buitenhuis R., Stobbs L., Wang K., Kim W.S., Ferguson G	2008	Vectoring of <i>Pepino mosaic virus</i> by bumble-bees in tomato greenhouses. Annals of Applied Biology 153:149-155. DOI: 10.1111/j.1744-7348.2008.00245.x No GLP Published	N		
B 10.2	Stobbs L., Greig N., Weaver S., Shipp L., Ferguson G	2009	The potential role of native weed species and bumble bees ( <i>Bombus impatiens</i> ) on the epidemiology of <i>Pepino mosaic virus</i> . Canadian Journal of Plant Pathology 31:254-261 No GLP Published	N		
B 10.2	Stobbs L.W., Greig N.	2014	First report of bumblebee ( <i>Bombus impatiens</i> Cresson) transmission of <i>Pepino mosaic virus</i> between tomato ( <i>Solanum lycopersicum</i> L.) and perennial climbing nightshade ( <i>Solanum dulcamara</i> L.). Canadian Journal of Plant Pathology 36:529-533. DOI: 10.1080/07060661.2014.954625 No GLP Published	N		
B 10.2	Zhang T., Breitbart M., Lee W.H., Run J.-Q., Wei C.L., Soh S.W.L., Hibberd M.L., Liu E.T., Rohwer F., Ruan Y.	2006	RNA viral community in human feces: prevalence of plant pathogenic viruses. PLoS biology 4:e3. No GLP Published	N		