**Supplementary tables**

**Table S1:** Ribosomal peptides produced by strains of the *B. subtilis* group.

| **RPs class\*** | **RPs subclass\*\*** | **Compound** | **Antimicrobial activity\*\*\*** | | **References** |
| --- | --- | --- | --- | --- | --- |
| **Antibacterial activity** | **Antifungal activity** |
| Bacteriocin | Subclass I.1 | Entianin | *Enterococcus faecalis* c*, Micrococcus luteus* c*, Staphylococcus aureus* c | *-* | Fuchs *et al.*, 2011 |
| Bacteriocin | Subclass I.1 | Ericin A | Similar to Ericin S with minor activity | *-* | Stein *et al.*, 2002 |
| Bacteriocin | Subclass I.1 | Ericin S | *B. amyloliquefaciens* c*, Bacillus brevis* c*, Bacillus cereus* c*, Bacillus firmus* c*, Bacillus polymyxa* c*, Bacillus sphaericus* c*, Bacillus subtilis* c*, Clavibacter michiganensis* c*, Lactococcus lactis* c | *-* | Stein *et al.*, 2002, Agrios, 1988 |
| Bacteriocin | Subclass I.1 | Subtilin | *B. amyloliquefaciens* c*, B. brevis* c*, B. cereus* c*, B. firmus* c*, B. polymyxa* c*, B. sphaericus* c*, B. subtilis* c*, C. michiganensis* c*, L. lactis* c | *-* | Heinzmann *et al.*, 2006, Stein *et al.*, 2002 |
| Bacteriocin | Subclass I.2 | Mersacidin | *S. aureus* c*, Staphylococcus simulans* c | *-* | Brötz *et al.*, 1995 |
| Bacteriocin | Subclass I.2 | Sublancin 168 | *B. cereus* c*, Bacillus megaterium* c*, B. subtilis* c*, S. aureus* c*, Streptococcus pyogenes* c | *-* | Paik *et al.*, 1998 |
| Bacteriocin | Subclass I.3 | Lichenicidin | *B. cereus*p*, Bacillus halodurans*p*, L. lactis*p*, Listeria innocua*p*, L. monocytogenes*p*, S. aureus*p*, Streptococcus mutans*p*, Streptococcus pneumoniae*p | *-* | Begley *et al.*, 2009 |
| Bacteriocin | Subclass I.4 | Subtilosin A | *Enterobacter aerogenes* c*, E. faecalis* c*, E. coli* c*, Klebsiella pneumoniae* c*, Kocuria rhizophila* c*, L. monocytogenes* c*, Porphyromonas gingivalis*c*, Proteus mirabilis* c*, Pseudomonas aeruginosa* c*, Shigella sonnei* c*, S. enterica* c*, S. aureus* c*, Streptococcus gordonii* c*, S. pyogenes* c | *-* | Shelburne *et al.*, 2007 |
| Bacteriocin | Subclass II.3 | Lichenin | *Butyrivibrio fibrisolvens*p*, Eubacterium ruminantium*p*, Lactobacillus casei*p*, Ruminococcus albus*p*, Ruminococcus flavefaciens*p*, Streptococcus bovis*p | *-* | Pattnaik *et al.*, 2001 |
| Bacteriocin | Class III | Bac 14B | *Agrobacterium larrymoorei* c*, Agrobacterium rhizogenes* c*, Agrobacterium rubi* c*, Agrobacterium tumefaciens* c*, Agrobacterium vitis* c*, B. cereus* c*, B. licheniformis* c*, B. subtilis* c*, Pectobacterium carotovora subsp. carotovora* c*, E. coli* c*, M. luteus* c*, P. aeruginosa* c*, Pseudomonas savastanoi* pv. *savastanoi* c*, Pseudomonas syringae* pv*. syringae* c*, Salmonella typhimurium* c*, S. aureus* c | *Alternaria solani* c | Hammami *et al.*, 2012 |
| Bacteriocin | Class III | Baciamin | *-* | *B. cinerea* c*, F. oxysporum* c*, Helminthosporium turcicum* c*, Helminthosporium maydis* c*, Mycosphaerella arachidicola* c*, Pythium aphanidermatum* c*, R. solani* c*, Valsa mali* c | Wong *et al.*, 2008 |
| Bacteriocin | Subclass I.4 | Amylocyclicin | *B. brevis* c*, B. cereus* c*, B. licheniformis* c*, B. megaterium* c*, B. pumilus* c*, B. sphaericus* c*, B. subtilis* c*, C. michiganensis* c*, M. luteus* c*, P. granivorans* c*, P. polymyxa* c |  | Scholz *et al*., 2014 |
| Bacteriocin | Subclass 1.4 (Heterocyclo-anthracin family) | Sonorensin | *B. subtilis* c*, E. coli* c*, L. monocytogenes* c*, P. aeruginosa* c*, S. aureus* c, *Vibrio vulnificus* c |  | Chopra *et al*., 2014, Chopra *et al.,* 2015 |
| Bacteriocin | ND | Plantazolicin | *B. brevis*c*, B. cereus*c*, B. licheniformis*c*, B. megaterium*c*, B. pumilus*c*, B. sphaericus*c*, B. subtilis*c*, M. luteus*c*, P. granivorans*c |  | Scholz *et al*., 2011 |
| Bacteriocin | Class III | CAMT2 | *E. coli*p*, L. monocytogenes*p*, S. aureus*p*, Vibrio parahaemolyticus*p |  | An *et al.* 2015 |
| Bacteriocin | Class III | Bacisubin |  | *Alternaria brassicae*c*, B. cinerea*c*, Magnaporthe grisease*c*, R. solani*c*, S. sclerotiorum*c | Liu et al., 2007 |
| Bacteriocin | Subclass I.1 | Amylolysin | *B. cereus*c*, B.**megaterium*c*, B. subtilis*c*, Enterococcus faecalis*c*, Enterococcus faecium*c*, E. coli*c*, Lactobacillus plantarum*c*, Listeria innocua*c*, Listeria ivanovii*c*, L. monocytogenes*c*, M. luteus*c*, P. aeruginosa*c*, S. aureus*c*, Staphylococcus epidermis*c*, Streptococcus agalactiae*c | *Cryptococcus neoformans* c*, S. cerevisiae* c | Arguelles Arias et al., 2013 |
| Enzymes | Lytic | Chitinase |  | *Aspergillus niger*p | Podile and Prakash, 1996 |
| Enzymes | Quorum quenching | AHL-lactonases | *P. carotovora subsp. carotovora*c |  | Pan *et al.*, 2008 |

c Activity of isolated compound confirmed by compound purification or mutant deletion, p putative activity of the active compound contained in a broth mixture.

\* Two RPs classes are reported in this review: the bacteriocins and the enzymes

\*\* See Fig. 2 for the RPs subclasses, ND: Not determined

\*\*\* - = no activity known

**Table S2:** NRPs produced by strains of the *B. subtilis* group.

| **NRPs class\*** | **NRPs subclass\*\*** | **Compound** | **Antimicrobial activity\*\*\*** | | | **References** |
| --- | --- | --- | --- | --- | --- | --- |
| **Antibacterial activity** | **Antifungal activity** | **Antiviral activity** |
| Lipopeptides | Fengycin | Agrastatin A | - | *Alternaria solani* p*, Botrytis cinerea* p*, Plasmopara viticola* p | - | Lee and Kim, 2015 |
| Lipopeptides | Fengycin | Fengycin | - | *A. solani* c*, B. cinerea* p*, Fusarium graminearum* c*, Fusarium sambucinum* c*, F. oxysporum* p*, Podosphaera fusca* c*, Pythium sulcatum* c*, Pythium ultimum* p*, R. solani* c*, Rhizopus* sp*.*p*, Sclerotinia sclerotiorum* c | - | Cawoy *et al.*, 2014, Ongena *et al.*, 2005, Ramarathnam *et al.*, 2007 , Romero *et al.*, 2007, Guo et al., 2014, Wise *et al.*, 2014, Zhao *et al.*, 2014 |
| Lipopeptides | Fengycin | Fengycin A | - | *F. oxysporum f. sp. radicis-lycopersici* c*, F. oxysporum* f. sp*. spinaciae* c*, Fusarium solani* p*, S. sclerotiorum*p | - | Li *et al.*, 2012 , Malfanova *et al.*, 2012, Zhao *et al.*, 2012 |
| Lipopeptides | Fengycin | Fengycin B | - | *F. oxysporum*f. sp*. radicis-lycopersici* c*, F. solani* p | - | Malfanova *et al.*, 2012, Li *et al.*, 2012 |
| Lipopeptides | Fengycin | Fengycin C, D, S | - | *F. solani* p | - | Li *et al.*, 2012 |
| Lipopeptides | Fengycin | Plipastatin | - | *F. oxysporum* f. sp*. cucumerinum* p, *Fusarium graminearum* c | - | Gao L. *et al.*, 2017, Gong *et al.*, 2015 |
| Lipopeptides | Iturin | Bacillomycin | - | *P. fusca* c | - | Romero *et al.*, 2007 |
| Lipopeptides | Iturin | Bacillomycin D | - | *Alternaria alternata* c*, A. solani* c*, Aspergillus flavus* c*, Botryosphaerica ribis* c*, C. albicans* p*, Cryphonectria parasitica* p*, Colletotrichum acutatum* c*, Colletotrichum gloesporioides* c*, Didymella bryoniae* c*, F. graminearum* c*, F. oxysporum* c*, H. maydis* c*, Monilinia fructicola* c*, Penicillium expansum* c*, Phomopsis gossypii* c*, Phytophthora capsici* p*, Pyricularia grisea* c*, R. solani* c*, Sclerotium rolfsii* c*, S. sclerotiorum* c | - | Moyne *et al.* 2001, Gong *et al.*, 2014, Zhao *et al.*, 2010 , Yuan *et al.*, 2012, Tanaka *et al.*, 2014 |
| Lipopeptides | Iturin | Bacillomycin F | - | *A. niger* p*, B. cinerea* p*, Byssochlamys fulva* p*, F. oxysporum* p*, Monascus sp.* p*, Mycosphaerellla pinodes* p*, Neurospora crassa* p*, Penicillium chrysogenum* p*, Pleospora herbarum* p*, Rhodotorula pilimanae* p*, Rhizopus oligosporus* p*, S. cerevisae* p, *Sclerotinia fructigena* p*, S. sclerotiorum* p*, Stemphylium radicinum* p*, Trichophyton mentagrophytes* p | - | Mhammedi *et al.*, 1982,  Lee *et al.*, 2008, Thimon *et al.*, 1992 |
| Lipopeptides | Iturin | Bacillomycin L | - | *S. cerevisae* p*, R. solani* c | - | Thimon *et al.*, 1992, Zhang *et al.*, 2013 |
| Lipopeptides | Iturin | Bacillomycin LC | - | *Ceratocystis fagace* c*, C. parasitica* c*, Ophiostoma ulmi* c*, S. cerevisae* p, *Verticillium dahliae* c | - | Eshita *et al.*, 1995, Besson *et al.,* 1979 |
| Lipopeptides | Iturin | Bacillomycin R | *Agrobacterium tumefaciens* p | *Penicillium chrysogenum* p*, Penicillium notatum* p | - | Besson *et al.*, 1976 |
| Lipopeptides | Iturin | Eumycin | - | *P. chrysogenum* p*, P. notatum* p | - | Besson *et al.*, 1976 |
| Lipopeptides | Iturin | Iturin | - | *B. cinerea* c*, F. oxysporum*c*, P. ultimum* p*, R. solani* p*, Rhizopus* sp. p | - | Ongena *et al.*, 2005, Cawoy *et al.*, 2014 |
| Lipopeptides | Iturin | Iturin A | - | *Alternaria mali* p*, B. cinerea* p*, Botrytis elliptica* p*, Colletotrichum musae* p*, C. gloeosporioides* c*, F. graminearum* c, *F. oxysporum* c*, Glomerella cingulata* p*, Podosphaera fusca* c*, R. solani* p*, S. cerevisae* p*, S. rolfsii* p | - | Thimon *et al.*, 1992, Romero *et al.*, 2007, Hsieh *et al.*, 2008, Malfanova *et al.*, 2012, Kim *et al.*, 2010, Crane *et al.*, 2012, Gong *et al.*, 2015 |
| Lipopeptides | Iturin | Iturin C | - | *Gibberella zeae* p | - | Dunlap *et al.*, 2011 |
| Lipopeptides | Iturin | Iturin D, E | - | *B. cinerea* p*, C. albicans* p*, Candida tropicalis* p*, M. pinodes* p*, S. cerevisiae* p*, S. radicinum* p | - | Besson and Michel, 1986 |
| Lipopeptides | Iturin | Mycosubtilin | *M. luteus* p | *B. cinerea* p*, C. albicans* c, *Cryptococcus neoformans* c, *F. oxysporum* p*, P. aphanidermatum* p*, Pythium pastoris* p*, S. cerevisiae* c | - | Thimon *et al.*, 1992, Leclère *et al.*, 2005, Fickers *et al.,* 2009 |
| Lipopeptides | Iturin | Subtulene A | *Acinetobacter calcoaceticus* p*, A. tumefaciens* p*, Enterobacter cloacae* p*, E. coli* p*, K. pneumoniae* p*, Proteus mirabilis* p*, P. aeruginosa* p*, Pseudomonas maltophilia* p*, Pseudomonas putida* p*, Rhodobacter capsulatus* p*, Salmonella enteritidi* p *s, Salmonella typhi* p*, S. typhimurium* p*, Sinorhizobium meliloti* p*, Stenotrophomonas maltophilia* p*, Xanthomonas campestris* p | *C. gloeosporioides* p*, S. cerevisiae* p*, S. rolfsii* p | - | Thasana *et al.*, 2010 |
| Lipopeptides | Surfactin | Bamylocin A | - | *B. cinerea* p*, F. oxysporum* p*, R. solani* p | - | Lee *et al.* 2007 |
| Lipopeptides | Surfactin | Lichenysin | *B. licheniformis* p*, P. aeruginosa* p*, E. coli* p | *Candida utilis* p*, C. tropicalis* p*, Penicilium oxalicum* p*, S. cerevisiae* p*, Trichoderma reesei* p | - | Jenny *et al.*, 1991 |
| Lipopeptides | Surfactin | Lichenysin A | *A. calcoaceticus* c*, Alcaligenes eutrophus* c*, B. subtilis* c*, E. coli* c*, Enterobacter* sp. c, *Pseudomonas fluorescens* c*, Pseudomonas proteofaciens* c*, S. aureus* c | - | - | Yakimov *et al.* 1995 |
| Lipopeptides | Surfactin | Locillomycin | *X. oryzae* pv*. oryzae* c*, S. aureus* c | - | Porcine Epidemic Diarrhea Virus c | Luo *et al.*, 2015 |
| Lipopeptides | Surfactin | Pumilacidin A, B, C, D, E, F, G | *Vibrio alginolyticus* p*, S. aureus* p | *-* | *Herpes simplex* c | Naruse *et al.* 1990, Xiu *et al.,* 2017, Saggesse *et al.*, 2018 |
| Lipopeptides | Surfactin | Surfactin | *L. pneumophila* p*, L. monocytogenes* p*, P. syringae* c*, R. solanacearum* p*, S. aureus* p,*Xanthomonas axonopodis pv. glycines* p | *A. niger* p*, B. cinerea* p*, F. oxysporum* p*, F. solani* p*, Monilia fructigena* p*, Pennicilium expansum* p*, P. italicum* p*, R. solani p* | - | Bais *et al.*, 2004, Cawoy *et al.*, 2014, Preecha *et al.*, 2010, Dimkic *et al.*, 2013, Gao L. *et al.,*  2017, Romano *et al.*, 2013, Sabaté and Audisio, 2013, Kwon and Kim, 2014, Loiseau *et al.*, 2015, Luo *et al.,* 2014 |
| Lipopeptides | Surfactin | WH1 fungin | - | *R. solani p* | - | Qi *et al.*, 2010 |
| Other NRPs | Dipeptide | Bacilysin | *C. michiganense subsp. sepedonicum* p, *E. amylovora* c*, E. coli* p.*, S. typhi* p*, S. aureus* p*, S. pyogenes* p | *C. albicans* p*, Microcystis aeruginosa* c*, Phytophthora infestans* p*, S. cerevisiae* p | - | Kenig *et al.*, 1976, Kenig and Abraham, 1976, Loeffler *et al.*, 1986, Zuber *et al.*, 1993, Chen *et al.*, 2009, Wu *et al.*, 2014, Wu *et al.*, 2015, Caulier *et al.*, 2018 |
| Other NRPs | Dipeptide | Chlorotetain | - | *A. fumigatus* p*, A. niger* p*, C. albicans* p*, Paecilomyces uariotii* p | - | Zuber *et al.*, 1993, Rapp *et al.* 1988, Wang *et al.*, 2015 |
| Other NRPs | Siderophores | Bacillibactin | - | *F. oxysporum* f. sp. *capsici* p | - | Yu *et al.*, 2011 |
| Other NRPs | Polypeptide | Bacitracin A, F | *B. anthracis* c*, B. cereus* p*, E. coli* p*, S. aureus* p |  | - | Hussein and AL-Janabi*.*, 2006, Furuta *et al.*, 2018 |
| Other NRPs | Polypeptide | Mycobacillin | - | *A. niger* p | - | Majumdar and Bose, 1958 |
| Other NRPs | Dipeptide | Rhizocticin A | - | *Ascodesmis sphaerospora* p*, C. albicans* p*, Plicaria anthracis* p*, Nematospora coryli* p*, Paecilomyces variotii* p*, Trichophyton erinacei* p | - | Kugler *et al.*, 1990 |

c Activity of isolated compound confirmed by compound purification or mutant deletion, p putative activity of the compound contained in a broth mixture.

\* Two NRPs classes are reported in this review: the lipopeptides and the other NRPs.

\*\* See Fig. 2 for the NRPs subclasses.

\*\*\* - = no activity known.

**Table S3:** VOCs produced by strains of the *B. subtilis* group.

| **VOCs class\*** | **VOCs subclass\*\*** | **Compound** | **Antimicrobial activity\*\*\*** | | **References** |
| --- | --- | --- | --- | --- | --- |
| **Antifungal activity** | **Antibacterial activity** |
| Fatty acids and derivatives | Acids | Butanoic acid, 3-methyl | *F. oxysporum f. sp. lactucae* c*, Moniliophthora perniciosa* c | - | Chaves-Lopez *et al.*, 2015 |
| Fatty acids and derivatives | Acids | Gentisic acid | *Colletotrichum gloeosporioides* c | - | Zheng *et al.*, 2013 |
| Fatty acids and derivatives | Acids | n-Hexanoic acid | - | *R. solanacearum* c | Raza *et al.*, 2016 |
| Fatty acids and derivatives | Acids | n-Hexadecanoic acid | *C. gloeosporioides* c | - | Zheng *et al.*, 2013 |
|  |  |  | *Alternaria brassicae* p*, Alternaria solani* p*, Ascochyta citrullina* p*, B. cinerea* p*, Cercospora kikuchii* p*, Fusarium graminerum* p*, F. oxysporum* p*, Phoma arachnidicola* p*, Rhizoctonia solani* p*, Sclerotinia sclerotiorum* p*, Verticillium dahiae* p | - | Liu *et al.*, 2008 |
| Fatty acids and derivatives | Acids | Octadecanoic acid, Propanoic acid, 4-hexen-1-yl ester | *A. brassicae* p*, A. solani* p*, A. citrullina* p*, B. cinerea* p*, C. kikuchii* p*, F. graminerum* p*, F. oxysporum* p*, P. arachnidicola* p*, R. solani* p*, S. sclerotiorum* p*, V. dahiae* p | - | Liu *et al.*, 2008 |
| Fatty acids and derivatives | Acids | Oleic acid |  | *R. solanacearum* c | Raza *et al.*, 2016 |
|  |  |  | *A. brassica* p *e, A. solani* p*, A. citrullina* p*, B. cinerea* p*, C. kikuchii* p*, F. graminerum* p*, F. oxysporum* p*, P. arachnidicola* p*, R. solani* p*, S. sclerotiorum* p*, V. dahiae* p | - | Liu *et al.*, 2008 |
| Fatty acids and derivatives | Acids | Propanoic acid, 2-methyl | *F. oxysporum f. sp. lactucae* c*, M. perniciosa* c | - | Chaves-Lopez *et al.*, 2015 |
| Fatty acids and derivatives | Alcohols | 3,4-dimethyl-5-hexen-3-ol, Heptanol | *A. brassica* p *e, A. solani* p*, A. citrullina* p*, B. cinerea* p*, C. kikuchii* p*, F. graminerum* p*, F. oxysporum* p*, P. arachnidicola* p*, R. solani* p*, S. sclerotiorum* p*, V. dahiae* p | - | Liu *et al.*, 2008 |
| Fatty acids and derivatives | Alcohols | 2-Undecanol | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
| Fatty acids and derivatives | Alcohols | 1-Butanol | *F. oxysporum f. sp. lactucae* c*, M. perniciosa* c | - | Chaves-Lopez *et al.*, 2015 |
| Fatty acids and derivatives | Alcohols | 1-Butanol, 3-methyl- | *A. brassicae, A. solani, A. citrullina, B. cinerea, C. kikuchii, F. graminerum, F. oxysporum, P. arachnidicola, R. solani, S. sclerotiorum, V. dahiae,* | - | Liu *et al.*, 2008 |
|  |  |  | *F. oxysporum f. sp. lactucae* c*, M. perniciosa* c | - | Chaves-Lopez *et al.*, 2015 |
| Fatty acids and derivatives | Alcohols | Hexanol,2-ethyl | *B. cinerea* p | - | Chen *et al.*, 2008 |
|  |  |  | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
| Fatty acids and derivatives | Aldehydes | 2,4-Heptadienal, (E,E)-, 2-Decenal, (E)-, 2-Heptenal, (Z)-, 2-Nonenal, (E)-, 2-Octenal, (E)-, 2-Undecenal, 2,4 Decadienal, Octanal | *A. brassica* p *e, A. solani* p*, A. citrullina* p*, B. cinerea* p*, C. kikuchii* p*, F. graminerum* p*, F. oxysporum* p*, P. arachnidicola* p*, R. solani* p*, S. sclerotiorum* p*, V. dahiae* p | - | Liu *et al.*, 2008 |
|  |  | Decanal | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
| Fatty acids and derivatives | Aldehydes | Nonanal | *A. brassicae, A. solani, A. citrullina, B. cinerea, C. kikuchii, F. graminerum, F. oxysporum, P. arachnidicola, R. solani, S. sclerotiorum, V. dahiae,* | - | Liu *et al.*, 2008, Yuan *et al.*, 2012, Wang *et al.*, 2013 |
|  |  |  | - | *R. solanacearum* c | Raza *et al.*, 2016 |
| Fatty acids and derivatives | Alkanes | Eicosane, 10-methyl- | *B. cinerea* p | - | Chen *et al.*, 2008 |
| Fatty acids and derivatives | Alkanes | Heneicosane | *C. gloeosporioides* c | - | Zheng *et al.*, 2013 |
| Fatty acids and derivatives | Alkanes | Heptadecane | - | *R. solanacearum* c | Raza *et al.*, 2016 |
| Fatty acids and derivatives | Alkanes | Heptadecane, 2,6,10,15-tetramethyl- | *B. cinerea* p | - | Chen *et al.*, 2008 |
| Fatty acids and derivatives | Alkanes | Heptane, 2-methyl-7-oxabicyclo[2.2.1] | *A. brassica* p *e, A. solani* p*, A. citrullina* p*, B. cinerea* p*, C. kikuchii* p*, F. graminerum* p*, F. oxysporum* p*, P. arachnidicola* p*, R. solani* p*, S. sclerotiorum* p*, V. dahiae* p | - | Liu *et al.*, 2008 |
|  |  |  | *F. oxysporum f. sp. cubense* c | - | Wang *et al.*, 2013 |
| Fatty acids and derivatives | Alkanes | Hexadecane, 2,6,11,15-tetramethyl- | *B. cinerea* p | - | Chen *et al.*, 2008 |
| Fatty acids and derivatives | Alkanes | Nonadecane, 9-methyl- | *B. cinerea* p | - | Chen *et al.*, 2008 |
| Fatty acids and derivatives | Alkanes | Nonadecane,10-methyl- | *B. cinerea* p | - | Chen *et al.*, 2008 |
| Fatty acids and derivatives | Alkanes | Pentadecane | *F. oxysporum f. sp. cubense* c | - | Wang *et al.*, 2013 |
| Fatty acids and derivatives | Alkanes | Pentadecane, 8-hexyl- | *B. cinerea* p | - | Chen *et al.*, 2008 |
| Fatty acids and derivatives | Alkanes | Tetradecane | *F. oxysporum f. sp. cubense* c | - | Wang *et al.*, 2013 |
| Fatty acids and derivatives | Alkanes | Tetradecane, 2,6,10-trimethyl- | *B. cinerea* p | - | Chen *et al.*, 2008 |
| Fatty acids and derivatives | Alkanes | Undecane,1,2-methyl | *F. oxysporum f. sp. cubense* c | - | Wang *et al.*, 2013 |
| Fatty acids and derivatives | Alkenes | 1H-indene, 1-methylene- | *A. brassica* p *e, A. solani* p*, A. citrullina* p*, B. cinerea* p*, C. kikuchii* p*, F. graminerum* p*, F. oxysporum* p*, P. arachnidicola* p*, R. solani* p*, S. sclerotiorum* p*, V. dahiae* p | - | Liu *et al.*, 2008 |
| Fatty acids and derivatives | Alkenes | 1,3-butadiene | - | *R. solanacearum* c | Tahir *et al.*, 2017 |
| Fatty acids and derivatives | Alkenes | 1-decene, 8-methyl- | *A. brassica* p *e, A. solani* p*, A. citrullina* p*, B. cinerea* p*, C. kikuchii* p*, F. graminerum* p*, F. oxysporum* p*, P. arachnidicola* p*, R. solani* p*, S. sclerotiorum* p*, V. dahiae* p | - | Liu *et al.*, 2008 |
| Fatty acids and derivatives | Alkenes | 1,3- pentadiene | *B. cinerea* c | - | Gotor-Vila *et al.*, 2017 |
| Fatty acids and derivatives | Benzenoids | β-Benzeneethanamine | *C. gloeosporioides* c | - | Zheng *et al.*, 2013 |
| Fatty acids and derivatives | Benzenoids | 1,2-Benzisothiazol-3(2H)-one | - | *R. solanacearum* c | Tahir *et al.*, 2017 |
| Fatty acids and derivatives | Benzenoids | 2,4-bis(2-Methylpropyl)-phenol | *B. cinerea* p | - | Chen *et al.*, 2008 |
| Fatty acids and derivatives | Benzenoids | 2-Phenylethanol | - | *R. solanacearum* c | Raza *et al.*, 2016 |
| Fatty acids and derivatives | Benzenoids | 4-Hydroxybenzaldehyde | *B. cinerea* p | - | Chen *et al.*, 2008 |
|  |  |  | *F. oxysporum f. sp. cubense* c | - | Wang *et al.*, 2013 |
|  |  |  | - | *R. solanacearum* c | Tahir *et al.*, 2017 |
| Fatty acids and derivatives | Benzenoids | Benzene, 1,2,4,5-tetramethyl | *B. cinerea* p | - | Chen *et al.*, 2008 |
| Fatty acids and derivatives | Benzenoids | Benzene, 1,2,4-trimethyl | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
| Fatty acids and derivatives | Benzenoids | Benzene, 1-methyl-4-(1-methylethyl)- | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
| Fatty acids and derivatives | Benzenoids | Benzene, 2-propenyl | *F. oxysporum f. sp. cubense* c | - | Wang *et al.*, 2013 |
| Fatty acids and derivatives | Benzenoids | Benzene,1,4-dichloro | *F. oxysporum f. sp. cubense* c | - | Wang *et al.*, 2013 |
| Fatty acids and derivatives | Benzenoids | Benzothiazole | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
|  |  |  | *A. solani* c*, B. cinerea* c | - | Gao Z. *et al.*, 2017 |
| Fatty acids and derivatives | Benzenoids | Butylated hydroxytoluene | *C. gloeosporioides* c | - | Zheng *et al.*, 2013 |
| Fatty acids and derivatives | Benzenoids | Ethylbenzene | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
|  |  |  | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
| Fatty acids and derivatives | Benzenoids | Phenol, 2,4-bis(1,1- dimethylethyl) | *A. solani* c*, B. cinerea* c | - | Gao Z. *et al.*, 2017 |
| Fatty acids and derivatives | Benzenoids | Phenol, 4,4′-(1-methylethylidene) bis- | - | *R. solanacearum* c | Raza *et al.*, 2016 |
| Fatty acids and derivatives | Benzenoids | Phenol, 4-chloro-3-methyl | *A. solani* c*, B. cinerea* c | - | Gao Z. *et al.*, 2017 |
| Fatty acids and derivatives | Benzenoids | Phenol,2,3,6-trimethyl- | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
| Fatty acids and derivatives | Benzenoids | P-xylene | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
|  |  |  | *F. oxysporum f. sp. cubense* c | - | Wang *et al.*, 2013 |
| Fatty acids and derivatives | Benzenoids | Styrene | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
| Fatty acids and derivatives | Benzenoids | Toluene | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
| Fatty acids and derivatives | Esters | Ethyl acetate | *F. oxysporum f. sp. lactucae* c*, M. perniciosa* c | - | Chaves-Lopez *et al.*, 2015 |
| Fatty acids and derivatives | Furans | Furan, 2-pentyl- | *A. brassica* p *e, A. solani* p*, A. citrullina* p*, B. cinerea* p*, C. kikuchii* p*, F. graminerum* p*, F. oxysporum* p*, P. arachnidicola* p*, R. solani* p*, S. sclerotiorum* p*, V. dahiae* p | - | Liu *et al.*, 2008 |
| Fatty acids and derivatives | Ketones | Acetoin | *Penicillium crustosum* c | - | Arrebola *et al.*, 2010 |
|  |  |  | *B. cinerea* c | - | Gotor-Vila *et al.*, 2017 |
| Fatty acids and derivatives | Ketones | Butan-2-one | *F. oxysporum f. sp. lactucae* c*, M. perniciosa* c | - | Chaves-Lopez *et al.*, 2015 |
| Fatty acids and derivatives | Ketones | Butanone, 3-hydroxy-2- | *F. oxysporum f. sp. lactucae* c*, M. perniciosa* c | - | Chaves-Lopez *et al.*, 2015 |
|  |  |  | *C. gloeosporioides* c | - | Zheng *et al.*, 2013 |
|  |  |  | *F. oxysporum f. sp. cubense* c | - | Wang *et al.*, 2013 |
|  |  |  | *F. oxysporum f. sp. cubense* c | - | Yuan *et al.*, 2012 |
| Fatty acids and derivatives | Ketones | Dodecan-2-one | *F. oxysporum f. sp. cubense* c | - | Wang *et al.*, 2013 |
| Fatty acids and derivatives | Ketones | Ethanone, 1-(4-methylphenyl) | *F. oxysporum f. sp. cubense* c | - | Wang *et al.*, 2013 |
|  |  |  | *B. cinerea* p | - | Wang *et al.*, 2013 |
|  |  |  | *F. oxysporum f. sp. cubense* c | - | Chen *et al.*, 2008 |
|  |  |  | *C. gloeosporioides* c | - | Yuan *et al.*, 2012 |
|  |  |  | - | *R. solanacearum* c | Zheng *et al.*, 2013 |
|  |  |  | *A. brassica* p *e, A. solani* p*, A. citrullina* p*, B. cinerea* p*, C. kikuchii* p*, F. graminerum* p*, F. oxysporum* p*, P. arachnidicola* p*, R. solani* p*, S. sclerotiorum* p*, V. dahiae* p | - | Raza *et al.*, 2016 |
|  |  |  | *F. oxysporum f. sp. lactucae* c*, M. perniciosa* c | - | Wang *et al.*, 2013 |
| Fatty acids and derivatives | Ketones | Pentanone, 2,2,4-trimethyl-3- | - | *R. solanacearum* c | Liu *et al.*, 2008 |
| Fatty acids and derivatives | Ketones | Propan-2-one | *F. oxysporum f. sp. cubense* c | - | Chaves-Lopez *et al.*, 2015 |
| Fatty acids and derivatives | Ketones | Tridecan-2-one | *F. oxysporum f. sp. cubense* c | - | Raza *et al.*, 2016 |
|  |  |  | *A. brassica* p *e, A. solani* p*, A. citrullina* p*, B. cinerea* p*, C. kikuchii* p*, F. graminerum* p*, F. oxysporum* p*, P. arachnidicola* p*, R. solani* p*, S. sclerotiorum* p*, V. dahiae* p | - | Wang *et al.*, 2013 |
|  |  |  | *B. cinerea* p | - | Yuan *et al.*, 2012 |
|  |  |  | *Phaeomoniella chlamydospora* c | - | Raza *et al.*, 2016 |
|  |  |  | *A. solani* c | - | Wang *et al.*, 2013 |
| Nitrogen-containing | Azoles | 1H-imidazole, 1-ethyl | *F. oxysporum f. sp. lactucae* c*, M. perniciosa* c | - | Liu *et al.*, 2008 |
| Nitrogen-containing |  | Ammonium acetate | *B. cinerea* p | - | Chen *et al.*, 2008 |
| Nitrogen-containing | Pyrazines | Pyrazine, 2,5-dimethyl | *F. oxysporum f. sp. lactucae* c*, M. perniciosa* c | - | Haidar *et al.*, 2016 |
|  |  |  | *F. oxysporum f. sp. lactucae* c*, M. perniciosa* c | - | Gao Z. *et al.*, 2017 |
|  |  |  | *S. sclerotiorum* c | *-* |  |
| Nitrogen-containing | Pyrazines | Pyrazine, 2-ethyl-3,5-dimethyl | *B. cinera* c*, Monilia fructicola* c*, Monilinia laxa* c | - | Chaves-Lopez *et al.*, 2015 |
| Nitrogen-containing | Pyrazines | Pyrazine, tetramethyl- | *F. oxysporum f. sp. lactucae* c*, Moniliophthora perniciosa* c | - | Chen *et al.*, 2008 |
| Nitrogen-containing | Pyrazines | Pyrazine,2,3,5,6-tetramethyl | *Colletotrichum gloeosporioides* c | - | Chaves-Lopez *et al.*, 2015 |
| Sulphur-containing | - | Carbon disulphide | - | *R. solanacearum* c | Chaves-Lopez *et al.*, 2015 |
| Sulphur-containing | - | Dimethyl trisulfide | *C. gloeosporioides* c | - | Giorgio *et al.*, 2015 |
| Sulphur-containing | - | Thiophene | *Alternaria brassicae* p*, Alternaria solani* p*, Ascochyta citrullina* p*, B. cinerea* p*, Cercospora kikuchii* p*, Fusarium graminerum* p*, F. oxysporum* p*, Phoma arachnidicola* p*, Rhizoctonia solani* p*, Sclerotinia sclerotiorum* p*, Verticillium dahiae* p | - | Gotor-Vila *et al.*, 2017 |

c Activity of isolated compound, p putative activity of the compound contained in a broad mixture.

\* Three VOCs classes are secreted by *B. subtilis* strain: the fatty acids and derivatives, the nitrogen-containing as well as the sulphur-containing compounds.

\*\* See Fig. 2 for the VOCs subclasses.

\*\*\* - = no activity known.