

Table 1
A Selected List of Reports on Pathogen-Derived Resistance to Viruses

Virus	Supergroup	DNA construct					Ref.
		CP	CP RNA	RdRp	MP	Other	
AIMV	1	+		+			10,11
CMV	1	+		+			12,13
CPMV	4			+	+		14
CRSV	2			+			15
PEBV	1			+			16
PLRV	5		+				17
PVS	1	+					18
PVX	1	+		+			19,20
PVY	4		+	+		+	21–23
TEV	4		+				24
TMV	1	+		+			25,26
TRV	1	+					10
TSV	1	+					27
TSWV	3		+		+		28,29

The pluses refer to the viral genes used for transformation: CP, coat protein; CP RNA, untranslatable CP RNA; RdRp, RNA-dependent RNA polymerase; MP, movement protein. The viruses are abbreviated as follows: AIMV, alfalfa mosaic alfamovirus; CMV, cucumber mosaic cucumovirus; CPMV, cowpea mosaic comovirus; CRSV, cymbidium ringspot tombusvirus; PEBV, pea early browning tobnavirus; PLRV, potato leaf roll luteovirus; PVS, potato S carlavirus; PVX, potato X potexvirus; PVY, potato Y potyvirus; TEV, tobacco etch potyvirus; TMV, tobacco mosaic tobamovirus; TRV, tobacco rattle tobnavirus; TSV, tobacco streak ilarvirus; TSWV, tomato spotted wilt tospovirus. The viral Supergroups are denoted, with permission, after **ref. 29**: 1, α -like; 2, Carmo-like; 3, (–)-stranded; 4, Picorna-like; 5, Sobemo-like.

Expression of mutated viral genes is a promising novel technology. Transformation of tobacco plants with a mutant movement protein (MP) of tobacco mosaic tobamovirus inhibited systemic infection of the transgenic plants by a broad scala of plant viruses. Apparently, this crippled protein carries out part of its function, but blocks another step in virus movement, and thereby interferes with cell-to-cell spread of viruses (8).

Accumulation of viral CP confers resistance to the virus from which the CP gene was derived (*see* Chapters 3 and 52). This CPMR is established technology and it is expected that in the very near future the first transgenic virus-resistant products based on CP technology will be released to the market (9).

Table 1 is a list of reports dealing with pathogen-derived resistance. The reports in which it has unequivocally been demonstrated that accumulation of CP confers virus resistance have a plus under CPMR. Remarkably, all viruses