

## Available Gene-Trac® Tests

Contaminant Class	Redox	Gene-Trac® Test Name	Target	Relevance
Chlorinated Ethenes	Anaerobic	Dhc	<i>Dehalococcoides</i>	Dechlorinates PCE, TCE, all DCE isomers, VC
		Dhb	<i>Dehalobacter</i>	Dechlorination of PCE & TCE to cDCE
		Dsm	<i>Desulfuromonas</i>	Dechlorination of PCE & TCE to cDCE
		Dsb	<i>Desulfitobacterium</i>	Partial dechlorination of PCE and TCE to cDCE
		Geo	<i>Geobacter</i>	Dechlorinates PCE to cDCE/biogeochemical degradation
		Dhg	<i>Dehalogenimonas</i>	Dechlorination of tDCE to VC and VC to ethene
	Chloroethene FGA	Vinyl Chloride Reductase ( <i>vcrA</i> )	Dechlorination of cDCE & VC to ethene	
		BAV1 Reductase ( <i>bvcA</i> )	Dechlorination of cDCE and VC to ethene	
		Trichloroethene Reductase ( <i>tceA</i> )	Dechlorination of PCE and TCE to cDCE and VC	
Aerobic	Polaromonas	<i>Polaromonas</i>	Aerobic dechlorination of cDCE	
	etn	<i>etnE</i>	Aerobic degradation of VC	
Chlorinated Ethanes	Anaerobic	Dhb	<i>Dehalobacter</i>	Dechlorinates 1,1,1-TCA/1,2-DCA/1,1,2-TCA/ 1,1,2,2-TeCA
		Dhg	<i>Dehalogenimonas</i>	Dechlorinates 1,2- DCA, 1,1,2,2-TeCA , 1,1,2-TCA
		Dhc	<i>Dehalococcoides</i>	Dechlorinates 1,2-DCA to ethene
		Dsb	<i>Desulfitobacterium</i>	Dechlorinates 1,1,2-TCA & 1,2-DCA
		cfrA/dcrA	Dichloroethane Dehalogenase ( <i>dcrA</i> )	Dechlorinates 1,1,1-TCA & 1,1-DCA
	Aerobic	sMMO	Soluble Methane Monooxygenase	Co-metabolism of 1,1,1-TCA & 1,1-DCA by methanotrophs
		PMO	Propane Monooxygenase	Co-metabolism of chlorinated ethanes by propanotrophs
	dhIA	Haloalkane Dehalogenase ( <i>dhIA</i> )	Aerobic dechlorination of 1,2-DCA	
Chlorinated Methanes	Anaerobic	Dhb	<i>Dehalobacter</i>	Dechlorination of chloroform to DCM; DCM to acetate
		cfrA/dcrA	Chloroform Reductase ( <i>cfrA</i> )	Converts chloroform to dichloromethane
	Aerobic	sMMO	Soluble Methane Monooxygenase	Co-metabolism of chloroform & dichloromethane
Chlorinated Propanes	Anaerobic	Dhg	<i>Dehalogenimonas</i>	Converts TCP to allyl chloride; DCP to propene
		Dhc	<i>Dehalococcoides</i>	Converts DCP to propene
		Dhb	<i>Dehalobacter</i>	Converts DCP to propene
		Dsb	<i>Desulfitobacterium</i>	Dechlorination of TCP & DCP
Chlorinated Benzenes	Anaerobic	Dhc	<i>Dehalococcoides</i>	Partial dechlorination of HCB/PCB
		Dhb	<i>Dehalobacter</i>	Reductive dechlorination of DCB, MCB
Chlorinated Phenols	Anaerobic	Dhc	<i>Dehalococcoides</i>	Dechlorination of 2,3-dichlorophenol, TCP and PCP
PCBs	Anaerobic	Dhc	<i>Dehalococcoides</i>	Dechlorinates select Arochlor 1260 congeners
		Dhb	<i>Dehalobacter</i>	Dechlorinates 2,3,4-trichlorobiphenyl; 2,3,4,5-tetrachlorobiphenyl
		Dhg	<i>Dehalogenimonas</i>	Dechlorinates select Arochlor 1260 congeners
BTEX	Anaerobic	SRB	Sulfate reducing bacteria ( <i>dsrA</i> )	Partners to ORM-2 in anaerobic benzene degradation
		ORM-2	<i>Deltaproteobacterium ORM-2</i>	Anaerobic benzene degrader (SO <sub>4</sub> /CH <sub>4</sub> reducing conditions)
		Pepto-ben	Benzene degrading <i>Peptococcaceae</i>	Anaerobic benzene degrader under NO <sub>3</sub> reducing conditions
		abcA	Benzene Carboxylase ( <i>abcA</i> )	Involved in benzene ring cleavage
Fuel Oxygenates	Aerobic	MTBE/TBA	<i>Methylibium petroleiphilum</i> PM1	MTBE/TBE degrading microorganism
			tert-butyl alcohol hydroxylase ( <i>mdpJ</i> )	Active on TBA in aerobic MTBE degradation pathway
			HIBA mutase ( <i>hcmA</i> )	Active on 2-HIBA in aerobic MTBE degradation pathway
1,4-Dioxane	Aerobic metabolism	1,4-dioxane	Dioxane monooxygenase ( <i>dxmb</i> )	Energy yielding 1,4-dioxane degradation
		1,4-dioxane	Aldehyde Dehydrogenase	Energy yielding 1,4-dioxane degradation
	Aerobic Cometabolism	pMMO	Particulate Methane Monooxygenase	Co-oxidation of 1,4-dioxane in presence of methane
		sMMO	Soluble Methane Monooxygenase	Co-oxidation of 1,4-dioxane
		PMO	Propane Monooxygenase	Co-oxidation of 1,4-dioxane in presence of propane
Nitrogen	Anaerobic	Anammox	Major anammox genera	Anaerobic co-removal of ammonium and nitrite
Prokaryotic Groups	Variable	Universal	Bacteria	Quantifies <i>Bacteria</i> -measure of total biomass
		Arch	Archaea	Quantifies <i>Archaea</i> biomass
		SRB	Sulfate reducing bacteria ( <i>dsrA</i> )	Anaerobic hydrocarbon oxidation/biogeochemical reduction/MIC
		NGS	<i>Bacteria/Archaea</i>	Comprehensive characterization of microbial communities