Optimizing isothiocyanate formation during enzymatic glucosinolate breakdown by adjusting pH value, temperature and dilution in *Brassica* vegetables and *Arabidopsis thaliana*

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Glucosinolates (GLS) in µmol/g fresh weight	*Brassica rapa* 215		Inactivated *Brassica rapa* 215		*Brassica rapa* 374		Inactivated *Brassica rapa* 374		*Arabidopsis thaliana* Bur-0		*Arabidopsis thaliana* Hi-0		*Brassica oleracea* BroccoCress®		Inactivated *Brassica oleracea* BroccoCress®		*Brassica oleracea* white cabbage		Inactivated *Brassica oleracea* white cabbage	
	MW	SD	**MW**	SD	**MW**	SD	**MW**	SD	**MW**	SD	**MW**	SD	**MW**	SD	**MW**	SD	**MW**	SD	**MW**	SD
2-propenyl (2Prop)	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**1.806**	0.019	**5.088**	0.003	**0.000**	0.000	**0.000**	0.000	**1.231**	0.018	**2.357**	0.086
3-butenyl (3But)	**0.296**	0.003	**0.102**	0.001	**1.126**	0.034	**0.676**	0.024	**2.910**	0.011	**0.036**	0.000	**0.020**	0.000	**0.003**	0.001	**0.033**	0.003	**0.048**	0.001
4-pentenyl	**0.194**	0.006	**0.025**	0.000	**0.391**	0.012	**0.074**	0.003	**0.073**	0.005	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000
***R*-2-OH-3-butenyl**	**0.053**	0.001	**0.030**	0.002	**0.000**	0.000	**0.000**	0.000	**0.198**	0.005	**0.000**	0.000	**0.011**	0.001	**0.000**	0.000	**0.428**	0.025	**0.701**	0.027
***S*-2-OH-3-butenyl**	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.355**	0.001	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000
3-(methylthio)propyl	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.046**	0.001	**0.000**	0.000	**0.007**	0.001	**0.000**	0.000	**0.024**	0.001	**0.098**	0.015
4-(methylthio)butyl	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**1.119**	0.045	**1.114**	0.001	**0.014**	0.002	**0.023**	0.001
3-(methylsulphinyl)propyl	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.163**	0.001	**0.151**	0.002	**0.587**	0.012	**1.467**	0.065
4-(methylsulphinyl)butyl	**0.066**	0.025	**0.024**	0.011	**0.010**	0.002	**0.033**	0.010	**0.038**	0.014	**0.000**	0.000	**5.856**	0.078	**5.923**	0.134	**0.240**	0.011	**0.486**	0.021
7-(methylsulphinyl)heptyl	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.196**	0.001	**0.034**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000
8-(methylsulphinyl)octyl	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.925**	0.017	**0.477**	0.014	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000	**0.000**	0.000
2-phenylethyl	**0.012**	0.002	**0.004**	0.000	**0.031**	0.002	**0.011**	0.000	**0.017**	0.004	**0.000**	0.004	**0.019**	0.000	**0.012**	0.000	**0.000**	0.000	**0.001**	0.000
3-indolylmethyl	**0.080**	0.002	**0.034**	0.001	**0.023**	0.002	**0.011**	0.001	**0.252**	0.004	**0.164**	0.004	**0.186**	0.005	**0.165**	0.001	**0.093**	0.004	**0.154**	0.005
1-methoxy-3-indolylmethyl	**0.005**	0.002	**0.003**	0.000	**0.028**	0.002	**0.010**	0.001	**0.044**	0.000	**0.042**	0.001	**0.047**	0.001	**0.052**	0.003	**0.016**	0.000	**0.023**	0.001
4-hydroxy-3-indolylmethyl	**0.006**	0.000	**0.003**	0.001	**0.004**	0.001	**0.003**	0.000	**0.007**	0.001	**0.005**	0.001	**0.147**	0.001	**0.121**	0.001	**0.112**	0.008	**0.194**	0.013
4-methoxy-3-indolylmethyl	**0.021**	0.001	**0.015**	0.000	**0.014**	0.000	**0.006**	0.000	**0.065**	0.004	**0.026**	0.000	**0.113**	0.003	**0.102**	0.001	**0.012**	0.001	**0.007**	0.000
Total GLS	**0.666**	0.011	**0.240**	0.011	**1.627**	0.054	**0.824**	0.015	**6.933**	0.041	**5.872**	0.007	**7.687**	0.020	**7.643**	0.135	**2.790**	0.024	**5.559**	0.235

Influence of temperature and pH value

µmol/g fresh weight

Brassica rapa 215	**4°C, pH 4.2**		**4°C, pH 6.3**		**4°C, pH 8.3**	4	**22°C, pH 4.2**		**22°C, pH 6.3**		**22°C, pH 8.3**		**37°C, pH 4.2**		**37°C, pH 6.3**		**37°C, pH 8.3**	
3-butenyl CN	**0.0185** ±	0.0093	**0.0034** ±	0.0010	**0.0097** ±	0.0029	**0.0064** ±	0.0055	**0.0024** ±	0.0013	**0.0017** ±	0.0019	**0.0105** ±	0.0084	**0.0130** ±	0.0206	**0.0061** ±	0.0064
3-butenyl ITC	**0.0223** ±	0.0019	**0.0067** ±	0.0043	**0.0162** ±	0.0014	**0.0076** ±	0.0050	**0.0056** ±	0.0028	**0.0146** ±	0.0038	**0.0020** ±	0.0006	**0.0000** ±	0.0000	**0.0104** ±	0.0008
1-cyano-3,4-epithiobutane	**0.0052** ±	0.0011	**0.0687** ±	0.0202	**0.0507** ±	0.0051	**0.0101** ±	0.0117	**0.0571** ±	0.0210	**0.0241** ±	0.0151	**0.0081** ±	0.0037	**0.0182** ±	0.0026	**0.0200** ±	0.0042
4-pentenyl ITC	**0.0506** ±	0.0135	**0.0015** ±	0.0017	**0.0032** ±	0.0005	**0.0294** ±	0.0477	**0.0020** ±	0.0006	**0.0032** ±	0.0006	**0.0000** ±	0.0000	**0.0006** ±	0.0010	**0.0015** ±	0.0007
1-cyano-4,5-epithiopentane	**0.0032** ±	0.0004	**0.0156** ±	0.0045	**0.0066** ±	0.0005	**0.0031** ±	0.0027	**0.0095** ±	0.0023	**0.0047** ±	0.0006	**0.0011** ±	0.0019	**0.0038** ±	0.0013	**0.0037** ±	0.0007
2-phenylethyl CN	**0.0081** ±	0.0030	**0.0040** ±	0.0017	**0.0017** ±	0.0004	**0.0053** ±	0.0055	**0.0034** ±	0.0014	**0.0016** ±	0.0003	**0.0013** ±	0.0001	**0.0013** ±	0.0003	**0.0015** ±	0.0003
2-phenylethyl ITC	**0.0024** ±	0.0006	**0.0011** ±	0.0001	**0.0014** ±	0.0012	**0.0014** ±	0.0005	**0.0015** ±	0.0003	**0.0008** ±	0.0001	**0.0014** ±	0.0002	**0.0018** ±	0.0004	**0.0004** ±	0.0002

Brassica rapa 374	**4°C, pH 4.2**		**4°C, pH 6.3**		**4°C, pH 8.3**	4	**22°C, pH 4.2**		**22°C, pH 6.3**		**22°C, pH 8.3**		**37°C, pH 4.2**		**37°C, pH 6.3**		**37°C, pH 8.3**	
3-butenyl CN	**0.1030** ±	0.0575	**0.0697** ±	0.0071	**0.0477** ±	0.0141	**0.0568** ±	0.0437	**0.1249** ±	0.0558	**0.0808** ±	0.0447	**0.0889** ±	0.0503	**0.1762** ±	0.0913	**0.0690** ±	0.0662
3-butenyl ITC	**0.3106** ±	0.0869	**0.5477** ±	0.1482	**0.6467** ±	0.2295	**0.3029** ±	0.2533	**0.4026** ±	0.2416	**0.6564** ±	0.2298	**0.6754** ±	0.5143	**0.4092** ±	0.1777	**0.3547** ±	0.3055
1-cyano-3,4-epithiobutane	**1.6773** ±	1.2678	**0.9409** ±	0.1564	**0.7627** ±	0.3608	**1.0321** ±	1.1254	**1.4932** ±	1.0723	**0.8237** ±	0.3709	**0.9370** ±	0.2860	**1.7951** ±	0.8852	**0.6017** ±	0.5355
4-pentenyl ITC	**0.0679** ±	0.0691	**0.0577** ±	0.0345	**0.1572** ±	0.0748	**0.0727** ±	0.1101	**0.0587** ±	0.0736	**0.0660** ±	0.0281	**0.0779** ±	0.0182	**0.1113** ±	0.1012	**0.0662** ±	0.0604
1-cyano-4,5-epithiopentane	**0.2010** ±	0.1791	**0.0601** ±	0.0424	**0.1380** ±	0.1081	**0.2040** ±	0.3283	**0.3083** ±	0.4979	**0.0710** ±	0.0453	**0.0724** ±	0.0325	**0.3807** ±	0.5503	**0.0443** ±	0.0451
2-phenylethyl CN	**0.0235** ±	0.0202	**0.0156** ±	0.0128	**0.0104** ±	0.0074	**0.0242** ±	0.0306	**0.0272** ±	0.0209	**0.0227** ±	0.0168	**0.0237** ±	0.0217	**0.0256** ±	0.0102	**0.0072** ±	0.0063
2-phenylethyl ITC	**0.0140** ±	0.0076	**0.0193** ±	0.0110	**0.0106** ±	0.0036	**0.0117** ±	0.0058	**0.0221** ±	0.0156	**0.0281** ±	0.0210	**0.0314** ±	0.0239	**0.0221** ±	0.0052	**0.0086** ±	0.0075

Arabidopsis thaliana Bur-0	**4°C, pH 4.2**		**4°C, pH 6.3**		**4°C, pH 8**		**22°C, pH 4.2**		**22°C, pH 6.3**		**22°C, pH 8**		**37°C, pH 4.2**		**37°C, pH 6.3**		**37°C, pH 8**	
2-propenyl CN	**0.0248** ±	0.0090	**0.0124** ±	0.0060	**0.0115** ±	0.0054	**0.0240** ±	0.0082	**0.0150** ±	0.0010	**0.0119** ±	0.0057	**0.0410** ±	0.0115	**0.0128** ±	0.0038	**0.0199** ±	0.0070
2-propenyl ITC	**0.0183** ±	0.0038	**0.0272** ±	0.0092	**0.0242** ±	0.0081	**0.0222** ±	0.0074	**0.0367** ±	0.0076	**0.0317** ±	0.0177	**0.0572** ±	0.0079	**0.0179** ±	0.0046	**0.0332** ±	0.0088
1-cyano-2,3-epithiopropane	**0.5712** ±	0.0850	**0.4891** ±	0.1957	**0.4426** ±	0.2189	**0.5002** ±	0.1549	**0.5435** ±	0.0668	**0.3834** ±	0.1630	**0.3367** ±	0.1658	**0.3126** ±	0.0868	**0.4535** ±	0.1535
3-butenyl CN	**0.1044** ±	0.0450	**0.0415** ±	0.0429	**0.0393** ±	0.0422	**0.0987** ±	0.0386	**0.0842** ±	0.0114	**0.0461** ±	0.0309	**0.1295** ±	0.0421	**0.0659** ±	0.0121	**0.0876** ±	0.0258
3-butenyl ITC	**0.0263** ±	0.0068	**0.0435** ±	0.0227	**0.0369** ±	0.0185	**0.0271** ±	0.0129	**0.0557** ±	0.0183	**0.0438** ±	0.0276	**0.0668** ±	0.0194	**0.0165** ±	0.0049	**0.0381** ±	0.0161
1-cyano-3,4-epithiobutane	**0.9930** ±	0.3247	**0.9383** ±	0.4846	**0.8514** ±	0.5239	**1.0288** ±	0.4774	**1.0590** ±	0.2590	**0.7077** ±	0.3108	**0.6644** ±	0.3814	**0.4646** ±	0.1398	**0.8601** ±	0.3931
2-hydroxy-3-butenyl CN	**0.0139** ±	0.0027	**0.0136** ±	0.0040	**0.0116** ±	0.0064	**0.0168** ±	0.0023	**0.0174** ±	0.0027	**0.0120** ±	0.0029	**0.0186** ±	0.0009	**0.0161** ±	0.0053	**0.0147** ±	0.0017
1-cyano-2-hydroxy-3,4-epithiobutane	**0.1319** ±	0.0256	**0.1441** ±	0.0406	**0.1110** ±	0.0640	**0.1423** ±	0.0226	**0.1592** ±	0.0228	**0.0990** ±	0.0249	**0.0960** ±	0.0284	**0.1152** ±	0.0403	**0.1155** ±	0.0102
4-pentenyl ITC	**0.0000** ±	0.0000	**0.0007** ±	0.0012	**0.0007** ±	0.0012	**0.0013** ±	0.0012	**0.0013** ±	0.0011	**0.0004** ±	0.0007	**0.0010** ±	0.0009	**0.0000** ±	0.0000	**0.0007** ±	0.0006
1-cyano-4,5-epithiopentane	**0.0297** ±	0.0049	**0.0267** ±	0.0161	**0.0212** ±	0.0171	**0.0300** ±	0.0182	**0.0279** ±	0.0121	**0.0159** ±	0.0057	**0.0146** ±	0.0088	**0.0112** ±	0.0049	**0.0198** ±	0.0104
2-phenylethyl CN	**0.0113** ±	0.0011	**0.0113** ±	0.0025	**0.0102** ±	0.0034	**0.0112** ±	0.0027	**0.0112** ±	0.0013	**0.0096** ±	0.0013	**0.0083** ±	0.0019	**0.0082** ±	0.0012	**0.0111** ±	0.0013
2-phenylethyl ITC	**0.0017** ±	0.0004	**0.0011** ±	0.0001	**0.0009** ±	0.0001	**0.0009** ±	0.0007	**0.0012** ±	0.0003	**0.0011** ±	0.0001	**0.0009** ±	0.0003	**0.0023** ±	0.0004	**0.0017** ±	0.0002
5-(methylthio)pentyl CN	**0.0020** ±	0.0004	**0.0020** ±	0.0006	**0.0015** ±	0.0008	**0.0023** ±	0.0006	**0.0023** ±	0.0004	**0.0012** ±	0.0004	**0.0013** ±	0.0006	**0.0012** ±	0.0003	**0.0016** ±	0.0002
6-(methylthio)hexyl CN	**0.0046** ±	0.0009	**0.0034** ±	0.0014	**0.0030** ±	0.0018	**0.0036** ±	0.0015	**0.0033** ±	0.0002	**0.0023** ±	0.0007	**0.0018** ±	0.0010	**0.0014** ±	0.0005	**0.0030** ±	0.0011
7-(methylthio)heptyl CN	**0.0217** ±	0.0022	**0.0176** ±	0.0064	**0.0175** ±	0.0087	**0.0177** ±	0.0043	**0.0164** ±	0.0018	**0.0129** ±	0.0040	**0.0085** ±	0.0052	**0.0062** ±	0.0030	**0.0152** ±	0.0038
7-(methylthio)heptyl ITC	**0.0017** ±	0.0007	**0.0024** ±	0.0034	**0.0035** ±	0.0021	**0.0031** ±	0.0032	**0.0055** ±	0.0017	**0.0027** ±	0.0027	**0.0039** ±	0.0024	**0.0058** ±	0.0001	**0.0026** ±	0.0031
8-(methylthio)octyl CN	**0.0413** ±	0.0039	**0.0276** ±	0.0110	**0.0335** ±	0.0143	**0.0230** ±	0.0077	**0.0220** ±	0.0034	**0.0187** ±	0.0059	**0.0106** ±	0.0080	**0.0080** ±	0.0042	**0.0237** ±	0.0065
8-(methylthio)octyl ITC	**0.0058** ±	0.0006	**0.0013** ±	0.0012	**0.0020** ±	0.0010	**0.0032** ±	0.0024	**0.0010** ±	0.0001	**0.0008** ±	0.0008	**0.0068** ±	0.0050	**0.0007** ±	0.0007	**0.0020** ±	0.0016
8-(methylsulphinyl)octyl CN	**0.0170** ±	0.0081	**0.0154** ±	0.0088	**0.0117** ±	0.0055	**0.0116** ±	0.0057	**0.0175** ±	0.0031	**0.0143** ±	0.0096	**0.0084** ±	0.0045	**0.0106** ±	0.0064	**0.0174** ±	0.0106
indole-3-acetonitrile	**0.0138** ±	0.0014	**0.0175** ±	0.0036	**0.0125** ±	0.0040	**0.0076** ±	0.0010	**0.0174** ±	0.0007	**0.0115** ±	0.0016	**0.0029** ±	0.0016	**0.0121** ±	0.0051	**0.0140** ±	0.0023

Arabidopsis thaliana Hi-0	**4°C, pH 4.2**		**4°C, pH 6.4**		**4°C, pH 8.2**	4	**22°C, pH 4.2**		**22°C, pH 6.4**		**22°C, pH 8.2**		**37°C, pH 4.2**		**37°C, pH 6.4**		**37°C, pH 8.2**	
2-propenyl CN	**0.2353** ±	0.0785	**0.4047** ±	0.2263	**0.2097** ±	0.0463	**0.1713** ±	0.0961	**0.3074** ±	0.0568	**0.1600** ±	0.0186	**0.1952** ±	0.0610	**0.1445** ±	0.0464	**0.0848** ±	0.0112
2-propenyl ITC	**0.9009** ±	0.2021	**0.5600** ±	0.1739	**0.8381** ±	0.0522	**0.6106** ±	0.1781	**0.6050** ±	0.1447	**0.8405** ±	0.2327	**0.5789** ±	0.1284	**0.3421** ±	0.0246	**0.6884** ±	0.1199
1-cyano-2,3-epithiopropane	**0.0044** ±	0.0008	**0.0031** ±	0.0018	**0.0015** ±	0.0007	**0.0056** ±	0.0013	**0.0026** ±	0.0010	**0.0010** ±	0.0001	**0.0105** ±	0.0031	**0.0010** ±	0.0005	**0.0005** ±	0.0002
3-butenyl ITC	**0.0036** ±	0.0011	**0.0025** ±	0.0013	**0.0034** ±	0.0004	**0.0029** ±	0.0016	**0.0028** ±	0.0009	**0.0033** ±	0.0014	**0.0037** ±	0.0007	**0.0016** ±	0.0001	**0.0034** ±	0.0011
7-(methylthio)heptyl ITC	**0.0013** ±	0.0002	**0.0037** ±	0.0025	**0.0011** ±	0.0002	**0.0014** ±	0.0005	**0.0067** ±	0.0010	**0.0010** ±	0.0003	**0.0014** ±	0.0003	**0.0063** ±	0.0008	**0.0053** ±	0.0004
8-(methylthio)octyl CN	**0.0007** ±	0.0007	**0.0007** ±	0.0008	**0.0007** ±	0.0007	**0.0012** ±	0.0006	**0.0011** ±	0.0001	**0.0013** ±	0.0001	**0.0013** ±	0.0004	**0.0020** ±	0.0003	**0.0014** ±	0.0002
8-(methylthio)octyl ITC	**0.0123** ±	0.0020	**0.0055** ±	0.0023	**0.0082** ±	0.0021	**0.0104** ±	0.0039	**0.0042** ±	0.0007	**0.0062** ±	0.0024	**0.0112** ±	0.0024	**0.0019** ±	0.0004	**0.0033** ±	0.0011
2-phenylethyl CN	**0.0010** ±	0.0003	**0.0010** ±	0.0003	**0.0008** ±	0.0001	**0.0013** ±	0.0001	**0.0010** ±	0.0001	**0.0012** ±	0.0003	**0.0012** ±	0.0003	**0.0009** ±	0.0007	**0.0011** ±	0.0001
indole-3-acetonitrile	**0.0010** ±	0.0001	**0.0022** ±	0.0006	**0.0009** ±	0.0009	**0.0008** ±	0.0003	**0.0007** ±	0.0006	**0.0003** ±	0.0005	**0.0000** ±	0.0000	**0.0005** ±	0.0004	**0.0006** ±	0.0006

Brassica oleracea BroccoCress®	**4°C, pH 3.8**		**4°C, pH 5.6**		**4°C, pH 8.2**		**22°C, pH 3.8**		**22°C, pH 5.6**		**22°C, pH 8.2**		**37°C, pH 3.8**		**37°C, pH 5.6**		**37°C, pH 8.2**	
4-(methylthio)butyl CN	**1.0418** ±	0.1780	**0.9735** ±	0.1604	**0.8010** ±	0.2794	**0.9300** ±	0.0330	**0.9218** ±	0.1484	**0.7404** ±	0.1278	**0.2935** ±	0.0492	**1.0183** ±	0.2372	**0.4334** ±	0.0684
4-(methylthio)butyl ITC	**0.2701** ±	0.2914	**0.1013** ±	0.0382	**0.5326** ±	0.0730	**0.3022** ±	0.0991	**0.1301** ±	0.0273	**0.4201** ±	0.2004	**0.3974** ±	0.0771	**0.0760** ±	0.0499	**0.2453** ±	0.0916
5-(methylthio)pentyl CN	**0.0008** ±	0.0002	**0.0042** ±	0.0009	**0.0032** ±	0.0013	**0.0039** ±	0.0002	**0.0042** ±	0.0010	**0.0031** ±	0.0008	**0.0016** ±	0.0002	**0.0021** ±	0.0009	**0.0016** ±	0.0004
3-(methylsulphinyl)propyl CN	**0.0618** ±	0.0496	**0.0710** ±	0.1009	**0.0179** ±	0.0047	**0.0280** ±	0.0073	**0.0290** ±	0.0118	**0.0191** ±	0.0061	**0.0126** ±	0.0052	**0.0286** ±	0.0116	**0.0177** ±	0.0129
3-(methylsulphinyl)propyl ITC	**0.0194** ±	0.0140	**0.0125** ±	0.0064	**0.0377** ±	0.0066	**0.0285** ±	0.0050	**0.0183** ±	0.0041	**0.0519** ±	0.0138	**0.0734** ±	0.0104	**0.0367** ±	0.0490	**0.1544** ±	0.0962
4-(methylsulphinyl)butyl CN	**2.5013** ±	0.7334	**1.9967** ±	0.2595	**1.6946** ±	0.2707	**2.1454** ±	0.4056	**1.9604** ±	0.3395	**1.0231** ±	0.2523	**0.6481** ±	0.0413	**1.2559** ±	0.2341	**0.5151** ±	0.0578
4-(methylsulphinyl)butyl ITC	**1.3149** ±	1.5635	**0.4885** ±	0.1468	**2.6549** ±	0.1353	**1.6530** ±	0.3352	**0.6452** ±	0.1580	**2.0664** ±	0.5858	**2.6445** ±	0.2629	**0.8798** ±	0.8123	**2.8103** ±	0.9438
2-phenylethyl CN	**0.0287** ±	0.0043	**0.0371** ±	0.0043	**0.0230** ±	0.0041	**0.0377** ±	0.0034	**0.0456** ±	0.0099	**0.0282** ±	0.0059	**0.0283** ±	0.0014	**0.0391** ±	0.0088	**0.0222** ±	0.0036
2-phenylethyl ITC	**0.0088** ±	0.0096	**0.0062** ±	0.0020	**0.0168** ±	0.0047	**0.0105** ±	0.0010	**0.0080** ±	0.0040	**0.0153** ±	0.0037	**0.0128** ±	0.0017	**0.0040** ±	0.0039	**0.0058** ±	0.0042
indole-3-acetonitrile	**0.0511** ±	0.0184	**0.0677** ±	0.0179	**0.0153** ±	0.0046	**0.0406** ±	0.0045	**0.0542** ±	0.0059	**0.0181** ±	0.0064	**0.0187** ±	0.0036	**0.0493** ±	0.0190	**0.0159** ±	0.0040
4-methoxyindole-3-acetonitrile	**0.0149** ±	0.0045	**0.0448** ±	0.0058	**0.0081** ±	0.0031	**0.0065** ±	0.0011	**0.0226** ±	0.0033	**0.0047** ±	0.0015	**0.0050** ±	0.0016	**0.0153** ±	0.0091	**0.0031** ±	0.0012

Influence of temperature at pH 4.2 on GLS-degradation in Bur-0

pH 4.2	% of 2-propenyl glucosinolate breakdowns			% of 3-butenyl glucosinolate breakdowns		
T	2-propenyl CN	2-propenyl ITC	1-cyano-2,3-epithiopropane	3-butenyl CN	3-butenyl ITC	1-cyano-3,4-epithiobutane
4	2.99 ± 0.60 a	3.96 ± 0.81 a	93.05 ± 1.09 b	2.62 ± 1.32 a	9.28 ± 2.12 a	88.10 ± 2.36 b
22	4.20 ± 1.45 a	4.35 ± 0.39 a	91.45 ± 1.66 b	2.42 ± 0.95 a	8.74 ± 0.66 a	88.84 ± 1.15 b
37	14.42 ± 4.60 b	9.81 ± 1.47 b	75.77 ± 6.03 a	8.56 ± 2.48 b	16.21 ± 3.44 b	75.23 ± 5.89 a

Influence of dilution
µmol/g fresh weight

Brassica rapa 215	H_2O, 22°C, Dilutionfactor 2	H_2O, 22°C, Dilutionfactor 3	H_2O, 22°C, Dilutionfactor 9	H_2O, 22°C, Dilutionfactor 17	Saliva buffer, 37°C, Dilutionfactor 2	Saliva buffer, 37°C, Dilutionfactor 3	Saliva buffer, 37°C, Dilutionfactor 9	Inactivated Plant Material, 22°C, Dilutionfactor 2	Inactivated Plant Material, 22°C, Dilutionfactor 3	Inactivated Plant Material, 22°C, Dilutionfactor 9
3-butenyl CN	**0.0100** ± 0.0114	**0.0236** ± 0.0216	**0.0117** ± 0.0040	**0.0095** ± 0.0019	**0.0037** ± 0.0016	**0.0094** ± 0.0051	**0.0037** ± 0.0028	**0.0112** ± 0.0064	**0.0146** ± 0.0087	**0.0086** ± 0.0028
3-butenyl ITC	**0.0081** ± 0.0035	**0.0207** ± 0.0239	**0.0490** ± 0.0175	**0.0857** ± 0.0134	**0.0052** ± 0.0059	**0.0164** ± 0.0056	**0.0480** ± 0.0319	**0.0322** ± 0.0191	**0.0229** ± 0.0110	**0.0242** ± 0.0083
1-cyano-3,4-epithiobutane	**0.2531** ± 0.1539	**0.7289** ± 0.6595	**0.2014** ± 0.0593	**0.2096** ± 0.0857	**0.2529** ± 0.1555	**0.2625** ± 0.0754	**0.0614** ± 0.0482	**0.3092** ± 0.0516	**0.1696** ± 0.0369	**0.0760** ± 0.0039
4-pentenyl ITC	**0.0032** ± 0.0008	**0.0167** ± 0.0205	**0.0198** ± 0.0058	**0.0368** ± 0.0101	**0.0065** ± 0.0069	**0.0150** ± 0.0053	**0.0149** ± 0.0110	**0.0179** ± 0.0093	**0.0139** ± 0.0056	**0.0140** ± 0.0037
1-cyano-4,5-epithiopentane	**0.0815** ± 0.0505	**0.2048** ± 0.2018	**0.0685** ± 0.0273	**0.0708** ± 0.0406	**0.1136** ± 0.0879	**0.1236** ± 0.0525	**0.0180** ± 0.0156	**0.1168** ± 0.0159	**0.0589** ± 0.0145	**0.0177** ± 0.0008
2-phenylethyl CN	**0.0085** ± 0.0065	**0.0189** ± 0.0154	**0.0047** ± 0.0013	**0.0061** ± 0.0010	**0.0068** ± 0.0055	**0.0053** ± 0.0021	**0.0025** ± 0.0015	**0.0084** ± 0.0021	**0.0044** ± 0.0009	**0.0041** ± 0.0005
2-phenylethyl ITC	**0.0010** ± 0.0002	**0.0010** ± 0.0002	**0.0015** ± 0.0009	**0.0024** ± 0.0002	**0.0017** ± 0.0011	**0.0007** ± 0.0004	**0.0012** ± 0.0004	**0.0022** ± 0.0019	**0.0021** ± 0.0006	**0.0021** ± 0.0004

Brassica rapa 374	H_2O, 22°C, Dilutionfactor 2	H_2O, 22°C, Dilutionfactor 3	H_2O, 22°C, Dilutionfactor 9	H_2O, 22°C, Dilutionfactor 17	Saliva buffer, 37°C, Dilutionfactor 2	Saliva buffer, 37°C, Dilutionfactor 3	Saliva buffer, 37°C, Dilutionfactor 9	Inactivated Plant Material, 22°C, Dilutionfactor 2	Inactivated Plant Material, 22°C, Dilutionfactor 9
3-butenyl CN	**0.1675** ± 0.0744	**0.0748** ± 0.0256	**0.0580** ± 0.0133	**0.0685** ± 0.0345	**0.0844** ± 0.0906	**0.0893** ± 0.0130	**0.0953** ± 0.0514	**0.1212** ± 0.1023	**0.1417** ± 0.0721
3-butenyl ITC	**0.3220** ± 0.0855	**0.3049** ± 0.0784	**0.5547** ± 0.1364	**0.7084** ± 0.1377	**0.1911** ± 0.0773	**0.4784** ± 0.2038	**0.8427** ± 0.2416	**0.3084** ± 0.0128	**0.5584** ± 0.0520
1-cyano-3,4-epithiobutane	**2.1484** ± 1.0656	**0.9903** ± 0.6344	**0.9153** ± 0.1746	**1.2581** ± 0.9686	**1.1667** ± 1.3534	**0.9389** ± 0.2511	**0.8574** ± 0.4033	**1.6961** ± 1.0196	**0.9456** ± 0.1443
4-pentenyl ITC	**0.1106** ± 0.1359	**0.0830** ± 0.0682	**0.0964** ± 0.1000	**0.1534** ± 0.0710	**0.0540** ± 0.0776	**0.0286** ± 0.0215	**0.0699** ± 0.0262	**0.1162** ± 0.0990	**0.0915** ± 0.0234
1-cyano-4,5-epithiopentane	**0.4155** ± 0.5233	**0.1654** ± 0.1862	**0.0924** ± 0.0966	**0.2649** ± 0.2907	**0.3041** ± 0.5016	**0.0337** ± 0.0225	**0.0678** ± 0.0469	**0.3931** ± 0.5397	**0.0637** ± 0.0242
2-phenylethyl CN	**0.0317** ± 0.0176	**0.0107** ± 0.0104	**0.0164** ± 0.0119	**0.0274** ± 0.0286	**0.0210** ± 0.0250	**0.0159** ± 0.0077	**0.0305** ± 0.0173	**0.0218** ± 0.0146	**0.0138** ± 0.0051
2-phenylethyl ITC	**0.0169** ± 0.0047	**0.0103** ± 0.0052	**0.0184** ± 0.0122	**0.0143** ± 0.0036	**0.0129** ± 0.0079	**0.0221** ± 0.0156	**0.0369** ± 0.0225	**0.0197** ± 0.0069	**0.0159** ± 0.0051

Brassica oleracea BroccoCress®	H_2O, 22°C, Dilutionfactor 2	H_2O, 22°C, Dilutionfactor 3	H_2O, 22°C, Dilutionfactor 9	H_2O, 22°C, Dilutionfactor 17	Saliva buffer, 37°C, Dilutionfactor 2	Saliva buffer, 37°C, Dilutionfactor 3	Saliva buffer, 37°C, Dilutionfactor 9	Inactivated Plant Material, 22°C, Dilutionfactor 2	Inactivated Plant Material, 22°C, Dilutionfactor 3	Inactivated Plant Material, 22°C, Dilutionfactor 9
4-(methylthio)butyl CN	**1.0325** ± 0.5561	**0.8792** ± 0.0748	**0.8516** ± 0.0864	**0.6837** ± 0.0628	**0.6054** ± 0.1479	**0.4173** ± 0.1115	**0.5080** ± 0.1149	**0.6604** ± 0.0563	**0.5289** ± 0.1111	**0.3903** ± 0.0283
4-(methylthio)butyl ITC	**0.1069** ± 0.0625	**0.0752** ± 0.0201	**0.1387** ± 0.0299	**0.2841** ± 0.1167	**0.1303** ± 0.0129	**0.1188** ± 0.0457	**0.3812** ± 0.0513	**0.1266** ± 0.0021	**0.3200** ± 0.0435	**0.4975** ± 0.0170
5-(methylthio)pentyl CN	**0.0016** ± 0.0011	**0.0014** ± 0.0011	**0.0013** ± 0.0001	**0.0015** ± 0.0002	**0.0012** ± 0.0009	**0.0005** ± 0.0004	**0.0010** ± 0.0001	**0.0007** ± 0.0002	**0.0009** ± 0.0002	**0.0011** ± 0.0004
3-(methylsulfinyl)propyl CN	**0.0834** ± 0.0865	**0.0194** ± 0.0042	**0.0722** ± 0.1132	**0.0095** ± 0.0076	**0.0681** ± 0.0930	**0.0145** ± 0.0040	**0.0884** ± 0.0721	**0.0066** ± 0.0020	**0.1420** ± 0.0719	**0.0648** ± 0.0153
3-(methylsulfinyl)propyl ITC	**0.0149** ± 0.0028	**0.0071** ± 0.0024	**0.0149** ± 0.0099	**0.0298** ± 0.0208	**0.0843** ± 0.0737	**0.0456** ± 0.0147	**0.0416** ± 0.0056	**0.0062** ± 0.0003	**0.0368** ± 0.0068	**0.0695** ± 0.0117
4-(methylsulfinyl)butyl CN	**1.5311** ± 0.5871	**1.0493** ± 0.0879	**1.0230** ± 0.1583	**0.8049** ± 0.1577	**0.6940** ± 0.0243	**0.4730** ± 0.1841	**0.4046** ± 0.0790	**0.5528** ± 0.0129	**2.0638** ± 0.1790	**1.2038** ± 0.0830
4-(methylsulfinyl)butyl ITC	**0.3956** ± 0.1355	**0.2429** ± 0.0711	**0.4134** ± 0.1314	**0.8561** ± 0.4103	**1.3435** ± 0.3060	**1.2220** ± 0.2936	**1.6515** ± 0.2846	**0.3671** ± 0.0478	**0.9966** ± 0.0735	**1.3868** ± 0.1427
2-phenylethyl CN	**0.0310** ± 0.0134	**0.0279** ± 0.0063	**0.0305** ± 0.0064	**0.0261** ± 0.0033	**0.0235** ± 0.0026	**0.0191** ± 0.0029	**0.0223** ± 0.0017	**0.0185** ± 0.0012	**0.0225** ± 0.0024	**0.0206** ± 0.0010
2-phenylethyl ITC	**0.0047** ± 0.0035	**0.0023** ± 0.0003	**0.0047** ± 0.0026	**0.0064** ± 0.0028	**0.0055** ± 0.0015	**0.0042** ± 0.0009	**0.0073** ± 0.0005	**0.0059** ± 0.0004	**0.0117** ± 0.0020	**0.0126** ± 0.0012
indole-3-acetonitrile	**0.0393** ± 0.0234	**0.0386** ± 0.0066	**0.0530** ± 0.0158	**0.0340** ± 0.0029	**0.0143** ± 0.0046	**0.0160** ± 0.0060	**0.0146** ± 0.0042	**0.0153** ± 0.0016	**0.0145** ± 0.0013	**0.0152** ± 0.0014
4-methoxyindole-3-acetonitrile	**0.0312** ± 0.0287	**0.0216** ± 0.0076	**0.0100** ± 0.0034	**0.0042** ± 0.0013	**0.0029** ± 0.0015	**0.0026** ± 0.0012	**0.0025** ± 0.0006	**0.0057** ± 0.0003	**0.0052** ± 0.0006	**0.0061** ± 0.0006

Brassica oleracea white cabbage sprouts	H_2O, 22°C, Dilutionfactor 2	H_2O, 22°C, Dilutionfactor 3	H_2O, 22°C, Dilutionfactor 9	H_2O, 22°C, Dilutionfactor 17	Saliva buffer, 37°C, Dilutionfactor 2	Saliva buffer, 37°C, Dilutionfactor 3	Saliva buffer, 37°C, Dilutionfactor 9	Inactivated Plant Material, 22°C, Dilutionfactor 2	Inactivated Plant Material, 22°C, Dilutionfactor 3	Inactivated Plant Material, 22°C, Dilutionfactor 9
2-propenyl CN	**0.2289** ± 0.0790	**0.1277** ± 0.0495	**0.0977** ± 0.0399	**0.1169** ± 0.0283	**0.2054** ± 0.1136	**0.3157** ± 0.0238	**0.1892** ± 0.0467	**0.2322** ± 0.0742	**0.1878** ± 0.0707	**0.2267** ± 0.0084
2-propenyl ITC	**0.1870** ± 0.0870	**0.0876** ± 0.0199	**0.1156** ± 0.0457	**0.2967** ± 0.0904	**0.1217** ± 0.0704	**0.4041** ± 0.0450	**0.6507** ± 0.1453	**0.2641** ± 0.0847	**0.2972** ± 0.1047	**0.9247** ± 0.0341
1-cyano-2,3-epithiopropane	**1.2233** ± 0.2940	**0.9167** ± 0.1769	**0.7394** ± 0.2531	**0.8980** ± 0.2288	**0.8401** ± 0.1874	**0.7342** ± 0.0532	**0.3595** ± 0.0265	**0.8925** ± 0.0240	**0.7615** ± 0.3117	**0.2910** ± 0.0264
2-hydroxy-3-butenyl CN	**0.0390** ± 0.0080	**0.0222** ± 0.0111	**0.0199** ± 0.0095	**0.0293** ± 0.0074	**0.0449** ± 0.0271	**0.0639** ± 0.0167	**0.0515** ± 0.0049	**0.0525** ± 0.0096	**0.1318** ± 0.0115	**0.1351** ± 0.0165
1-cyano-2-hydroxy-3,4-epithiobutane	**0.1347** ± 0.0165	**0.0978** ± 0.0391	**0.0783** ± 0.0363	**0.1126** ± 0.0355	**0.1325** ± 0.0599	**0.1405** ± 0.0407	**0.0777** ± 0.0053	**0.1519** ± 0.0122	**0.2472** ± 0.0793	**0.1343** ± 0.0192
5-vinyl-1,3-oxazolidine-2-thione	**0.0011** ± 0.0006	**0.0005** ± 0.0003	**0.0005** ± 0.0003	**0.0016** ± 0.0007	**0.0026** ± 0.0019	**0.0137** ± 0.0065	**0.0235** ± 0.0077	**0.0064** ± 0.0024	**0.0126** ± 0.0044	**0.0292** ± 0.0016
3-(methylthio)propyl CN	**0.0398** ± 0.0176	**0.0280** ± 0.0111	**0.0130** ± 0.0081	**0.0232** ± 0.0077	**0.0222** ± 0.0057	**0.0259** ± 0.0024	**0.0148** ± 0.0057	**0.0312** ± 0.0060	**0.0325** ± 0.0109	**0.0335** ± 0.0023
3-(methylthio)propyl ITC	**0.0117** ± 0.0039	**0.0053** ± 0.0027	**0.0043** ± 0.0038	**0.0131** ± 0.0059	**0.0029** ± 0.0026	**0.0110** ± 0.0029	**0.0174** ± 0.0050	**0.0232** ± 0.0070	**0.0332** ± 0.0067	**0.0534** ± 0.0016
1-cyano-3,4-epithiobutane	**0.0240** ± 0.0115	**0.0158** ± 0.0023	**0.0072** ± 0.0033	**0.0115** ± 0.0048	**0.0127** ± 0.0049	**0.0106** ± 0.0009	**0.0066** ± 0.0008	**0.0178** ± 0.0015	**0.0171** ± 0.0062	**0.0094** ± 0.0011
4-(methylthio)butyl CN	**0.0051** ± 0.0027	**0.0030** ± 0.0022	**0.0000** ± 0.0000	**0.0020** ± 0.0018	**0.0016** ± 0.0014	**0.0024** ± 0.0007	**0.0008** ± 0.0013	**0.0036** ± 0.0006	**0.0042** ± 0.0012	**0.0048** ± 0.0003
4-(methylthio)butyl ITC	**0.0015** ± 0.0002	**0.0008** ± 0.0003	**0.0003** ± 0.0006	**0.0005** ± 0.0009	**0.0009** ± 0.0008	**0.0010** ± 0.0009	**0.0015** ± 0.0006	**0.0037** ± 0.0011	**0.0066** ± 0.0009	**0.0104** ± 0.0006

Glucosinolate hydrolysis products in myrosinase inactivated plant material (µmol/g FW)

Brassica rapa 215	
3-butenyl ITC	0.0083 ± 0.0081
Brassica rapa 374	
3-butenyl ITC	0.0024 ± 0.0007
Brassica oleracea BroccoCress®	
4-(methylthio)butyl CN	0.0771 ± 0.0135
4-(methylthio)butyl ITC	0.0048 ± 0.0012
4-(methylsulfinyl)butyl CN	0.1747 ± 0.0150
2-phenylethyl CN	0.0095 ± 0.0004
indole-3-acetonitrile	0.0095 ± 0.0019
4-methoxyindole-3-acetonitrile	0.0054 ± 0.0013
Brassica oleracea white cabbage sprouts	
2-propenyl CN	0.0128 ± 0.0014
2-propenyl ITC	0.0014 ± 0.0024
2-hydroxy-3-butenyl CN	0.0436 ± 0.0012
3-(methylthio)propyl CN	0.0065 ± 0.0001
4-(methylthio)butyl CN	0.0022 ± 0.0001
4-(methylthio)butyl ITC	0.0004 ± 0.0007