# Supplementary Materials for

# Investigating the in-solution photo-degradation pathway of Diamond Green G by chromatography and mass spectrometry

Running title: in-solution degradation of Diamond Green

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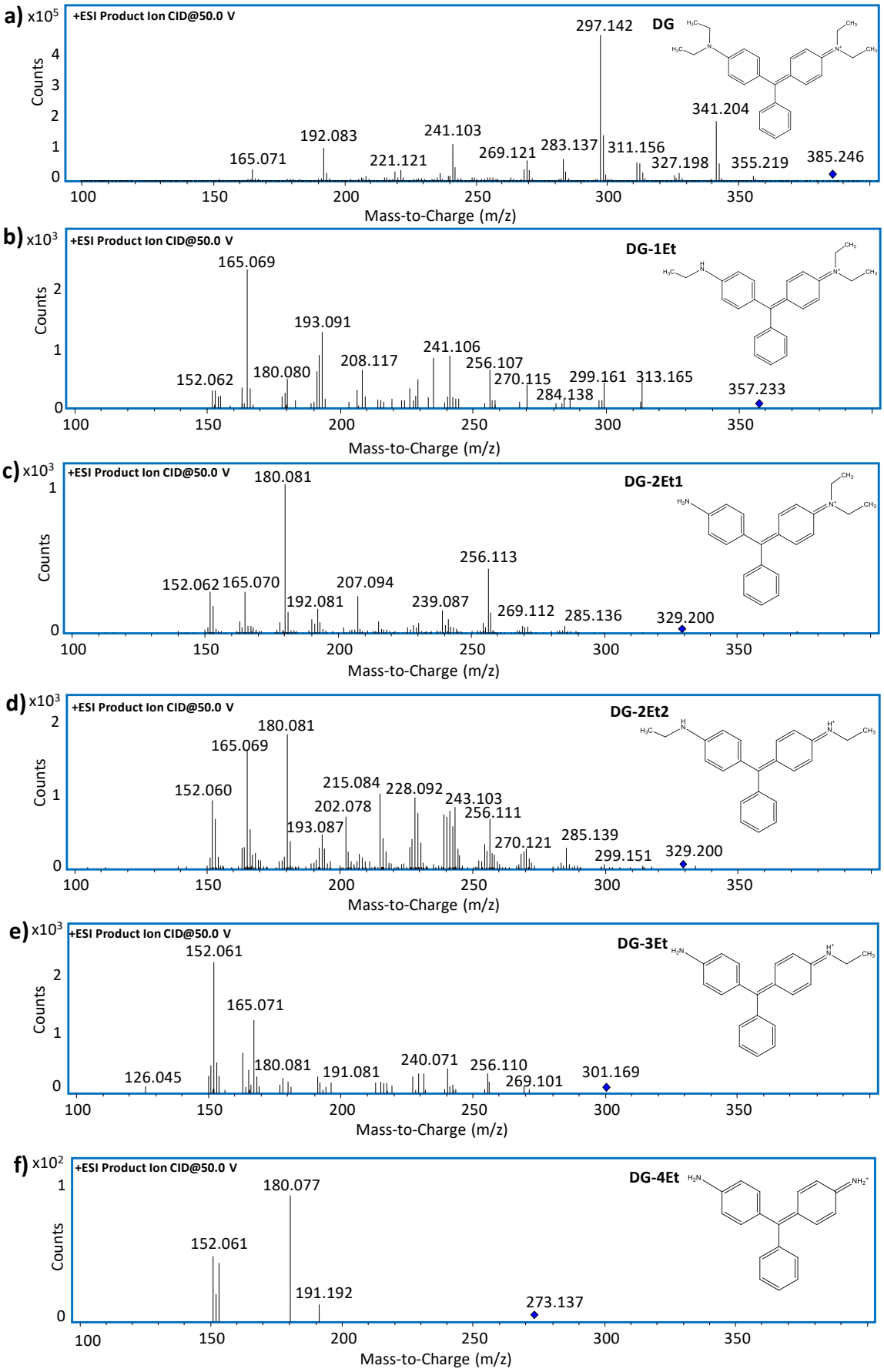


**Figure S1:** Product-ion mass spectra of **a)** DG; **b)** DG-1Et; **c)** DG-2Et1; **d)** DG-2Et2; **e)** DG-3Et; **f)** DG-4Et. Positive mode, CID at 50.0 V. Precursor-ions are indicated with a blue diamond.

**Table S1:** Fragments identified in MS/MS spectra of DG and its seven degradation products with triarylmethane structure.

| Label/MW | $[M]^+$ | $[M\text{-}Et]^+$ | $[M\text{-}Et\text{-}Me]^+$ | $[M\text{-}2Et]^+$ | $[M\text{-}2Et\text{-}Me]^+$ | $[M\text{-}3Et]^+$/ $[M\text{-}2Et\text{-}2Me]^+$ | $[M\text{-}Et\text{-}(Et)_2N]^+$ | $[M\text{-}4Et]^+$ |
|---|---|---|---|---|---|---|---|---|
| **DG** (385.264) | 385.264 | 355.217 | 341.204 | 327.187 | 311.156 | 297.142 | 283.136 | 269.12 |
| **MeDG** (371.248) | 371.248 | 341.201 | 327.187 | 311.153 | 297.140 | 284.142 | 269.119 | |
| **2MeDG** (357.233) | 357.233 | 327.185 | 313.171 | 299.163 | 284.138 | 270.127 | | |
| **DG-1Et** (357.233) | 357.233 | | 313.165 | 299.161 | 284.138 | 270.115 | | |
| **MeDG-1Et** (343.217) | 343.217 | | 299.137 | 284.115 | 269.115 | | | |
| **DG-2Et1** (329.201) | 329.201 | 299.151 | 285.139 | 269.112 | 256.113 | | | |
| **DG-2Et2** (329.201) | 329.201 | 299.151 | 285.139 | 269.112 | 256.111 | | | |
| **DG-3Et** (301.170) | 301.17 | 271.12 | | | | | | |
| **DG-4Et** (303.186) | 273.137 | | | | | | | |

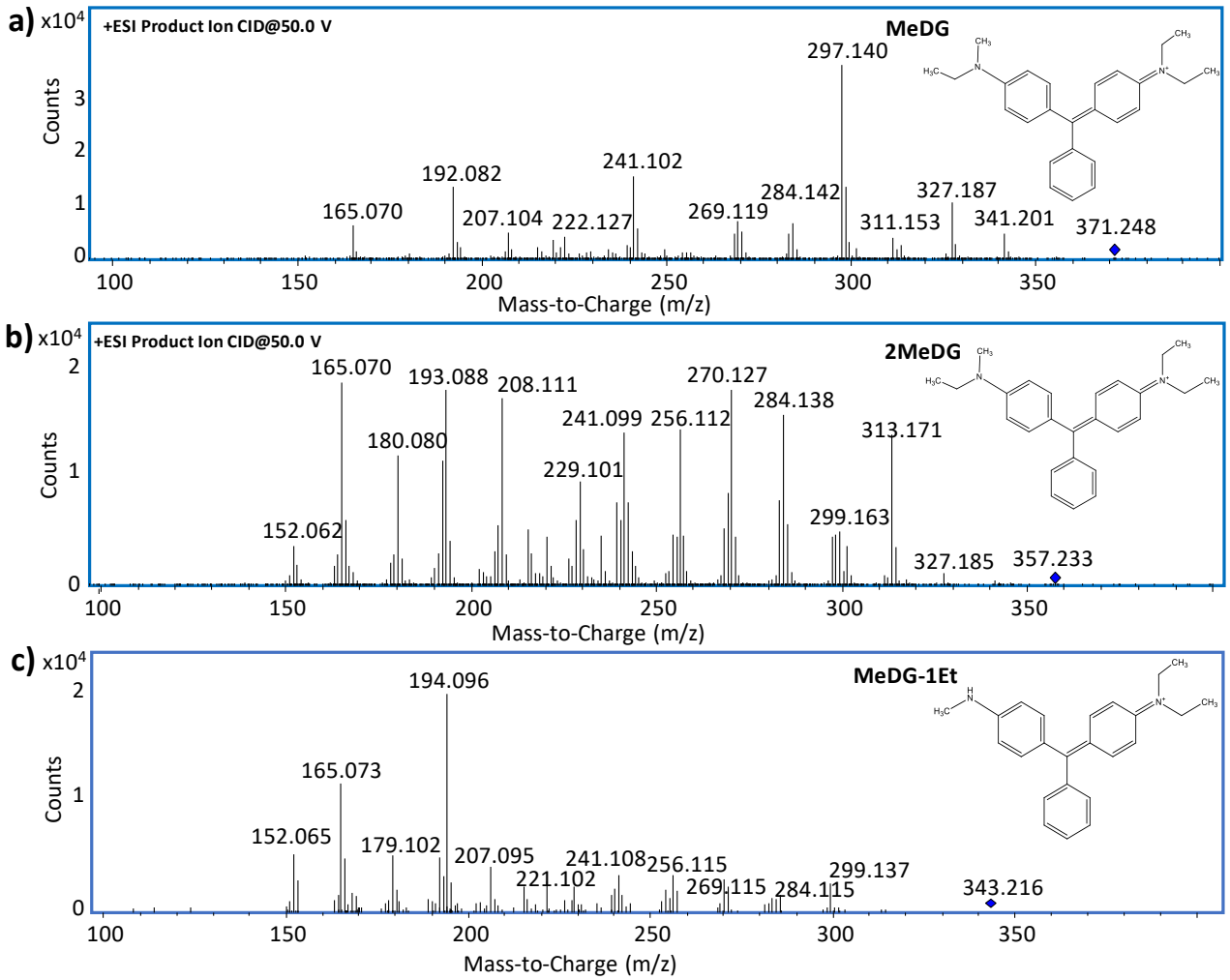


**Figure S2:** Product-ion mass spectra of **a)** MeDG; **b)** 2MeDG; **c)** MeDG-1Et. Positive mode, CID at 50.0 V.

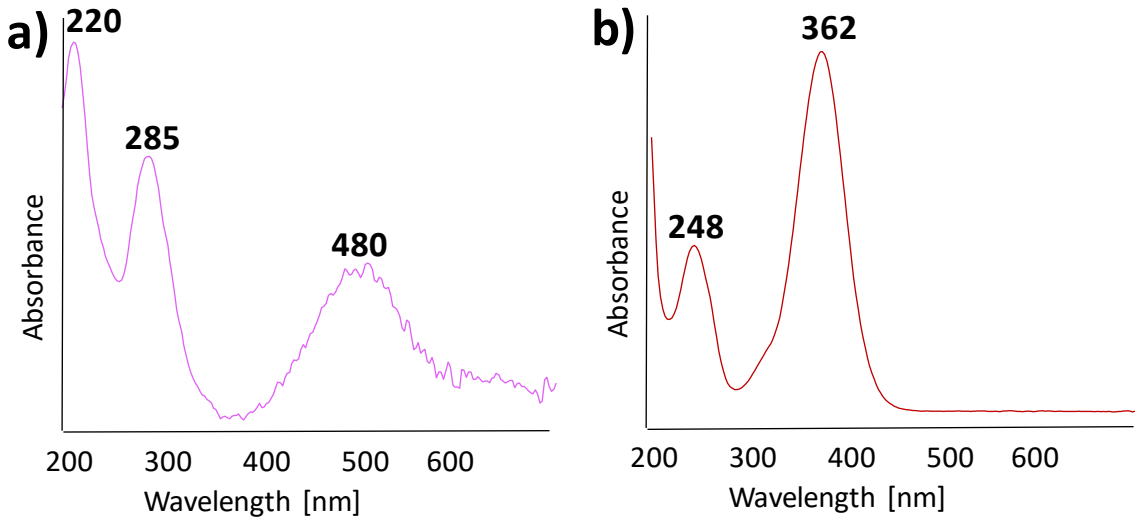


**Figure S3:** UV-Vis spectra of **a)** Unk and **b)** Carb.