Supplementary Material

Fred Chow: the contributions of a quiet giant of photoinhibition and photoprotection

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Table S1. Some chemicals used to study photodamage in order of appearance in this work

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Abbrev.</th>
<th>Activity</th>
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<tbody>
<tr>
<td>Atrazine</td>
<td>-</td>
<td>A PSII inhibitor that binds to the plastoquinone binding sites thereby blocking electron transport between between QA to QB.</td>
</tr>
<tr>
<td>3-(3,4-Dichlorophenyl)-1,1-dimethylurea</td>
<td>DCMU</td>
<td>A PSII inhibitor that binds to the plastoquinone binding sites thereby blocking electron transport between between QA to QB.</td>
</tr>
<tr>
<td>Bromoxinil</td>
<td>-</td>
<td>A PSII inhibitor that blocks electron transport between QA to QB.</td>
</tr>
<tr>
<td>Lincomycin</td>
<td>-</td>
<td>Antibiotic that inhibits the translation of proteins in the chloroplast, thus inhibiting PSII repair.</td>
</tr>
<tr>
<td>Nigericin</td>
<td>-</td>
<td>A lipophilic uncoupler that collapses the trans-thylakoid ΔpH gradient</td>
</tr>
<tr>
<td>Dithiothreitol</td>
<td>DTT</td>
<td>Inhibitor of violaxanthin to zeaxanthin conversion</td>
</tr>
</tbody>
</table>
### Table S2. Summary of frequently used parameters in photosynthesis research

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Concept</th>
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<tbody>
<tr>
<td>$F_O$</td>
<td>Chlorophyll fluorescence when all traps are open in the dark-adapted state, with quinone A ($Q_A$) in an oxidized state.</td>
</tr>
<tr>
<td>$F_M$</td>
<td>Maximum chlorophyll fluorescence in the dark-adapted state when all reactions centres are transiently closed and $Q_A$ is in reduced state.</td>
</tr>
<tr>
<td>$F_V$</td>
<td>Variable fluorescence. Arithmetical difference between $F_M$ and $F_O$.</td>
</tr>
<tr>
<td>$F_V/F_M$</td>
<td>Maximum quantum yield of primary photochemistry.</td>
</tr>
<tr>
<td>$F_M'$</td>
<td>Maximum fluorescence when sample is light adapted.</td>
</tr>
<tr>
<td>NPQ</td>
<td>Non-photochemical quenching of excitation independent of photochemical reactions and fluorescence emission.</td>
</tr>
<tr>
<td>qI</td>
<td>Non-photochemical quenching due to photoinhibition, such as the formation of silent centres or photodamaged reaction centres.</td>
</tr>
<tr>
<td>qZ</td>
<td>Non-photochemical quenching due to sustained conversion of the xanthophyll violaxanthin to zeaxanthin via de-epoxidation to induce sustained quenching of excitation.</td>
</tr>
<tr>
<td>qE</td>
<td>Non-photochemical quenching caused by the reversible formation of $\Delta pH$ energization across the thylakoid membranes, which in turn can trigger xanthophyll de-epoxidation.</td>
</tr>
<tr>
<td>$1/F_O-1/F_m$</td>
<td>The functional fraction of PSII that can perform photochemistry at a given time, in a dark-adapted state.</td>
</tr>
<tr>
<td>$F_S$</td>
<td>Fluorescence intensity at steady-state irradiance.</td>
</tr>
</tbody>
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