*Supplement of*

**Biomineralization induced by *Colletotrichum acutatum*: a potential strategy for cultural relic bioprotection**

**Tianxiao Li et al.**

*Correspondence to:* Bingjian Zhang(zhangbiji@zju.edu.cn)

**Supplement Contents**

This supplement contains, in the following order:

Table S1. The group set of the various media with different condition.

Figure S1. The way of insoluble calcium source cultured with *Colletotrichum acutatum*.

Figure S2. HPLC of the media cultured with *Colletotrichum acutatum* in the low carbon condition with CaCl2 at the first and third day.

Figure S3. EDS analysis of the precipitated crystals.

Table S1: The group set of the various media with different condition.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| group | Ca2+ | B4 | | |  | Czapek-Dox Medium | Other additives | Initial pH |
| yeast extract | | glucose |  |
| a1 | calcium acetate | + | + | |  | - | - | 5.7 |
| a2 | CaCl2 | + | + | |  | - | - | 5.5 |
| a3 | CaCl2 | + | + | |  | - | Urea | 8.0 |
| a4\* | CaSO4 | + | + | |  | - | - | 5.5 |
| a5 | Ca(OH)2 | + | + | |  | - | - | 12.0 |
| a6\* | CaCO3 | + | + | |  | - | - | 5.5 |
| a7\* | CaCO3 | + | | - |  | - | - | 5.5 |
| a8 | CaCl2 | - | - | |  | + | - | 5.4 |
| a9 | calcium acetate | - | - | |  | + | - | 5.4 |
| b1\* | calcium acetate | + | + | |  | - | - | 5.7 |
| b2\* | calcium acetate | + | | - |  | - | - | 5.9 |
| b3\* | CaCl2 | + | + | |  | - | - | 5.5 |
| b4\* | CaCl2 | + | | - |  | - | - | 5.5 |
| c1 | CaCl2 | + | + | |  | - | NaOH | 7.0 |
| c2 | CaCl2 | + | + | |  | - | NaOH | 8.0 |
| c3 | CaCl2 | + | + | |  | - | Urea, HCl | 7.0 |
| d1 | formic acid | + | + | |  | - | Ca(OH)2 | 7.0 |
| d2 | propionic acid | + | + | |  | - | Ca(OH)2 | 7.0 |
| d3 | α-ketoglutaric acid | + | + | |  | - | Ca(OH)2 | 7.0 |
| d4 | calcium lactate | + | + | |  | - | - | 7.0 |
| d5 | cadmium succinate | + | + | |  | - | - | 7.0 |
| d6\* | calcium oxalate | + | + | |  | - | - | 7.0 |
| d7 | calcium citrate | + | + | |  | - | - | 7.0 |

+: the component was added into the media; -: the substance was removed from the media; \*: the media were cultured with shaking



Figure S1: The way of insoluble calcium source cultured with *Colletotrichum acutatum*.



Figure S2: HPLC of the media cultured with *Colletotrichum acutatum* in the low carbon condition with CaCl2 at the first and third day.



Figure S3: EDS analysis of the precipitated crystals. (a1) calcium acetate in B4 medium, (a3) CaCl2 with urea in B4 medium, (a5) Ca(OH)2 in B4 medium, (a8) CaCl2 in Czapek-Dox medium, (a9) calcium acetate in Czapek-Dox medium, (b1) calcium acetate in B4 medium with shaking, (b2) calcium acetate in B4 medium without glucose, (b4) CaCl2 in B4 medium without glucose, (c2) CaCl2 in B4 medium with pH=8, (d1) formic acid in B4 medium, (d2) propionic acid in B4 medium, (d3) α-Ketoglutaric acid in B4 medium, (d4) calcium lactate in B4 medium, (d5) cadmium succinate in B4 medium, (d7) calcium citrate in B4 medium.