

**Table S2. Recipe of TAP medium**

| Component                             | Stock Solution (mg/mL) | Quantity Used* |
|---------------------------------------|------------------------|----------------|
| NH <sub>4</sub> Cl                    | 200                    | 2.0 mL         |
| CaCl <sub>2</sub> · 2H <sub>2</sub> O | 100                    | 0.5 mL         |
| MgSO <sub>4</sub> · 7H <sub>2</sub> O | 300                    | 1.0 mL         |
| K <sub>2</sub> HPO <sub>4</sub>       | 100                    | 1.0 mL         |
| KH <sub>2</sub> PO <sub>4</sub>       | 100                    | 1.0 mL         |
| Hutner's trace elements               | See following recipe   | 1.0 mL         |
| Acetic acid                           | -                      | 1.0 mL         |
| Tris (hydroxymethyl) aminomethane     | -                      | 2.42 g         |

\*To prepare: make up to 1 liter with distilled water (DW). Autoclave at 121°C for 20 minutes.

**Recipe of Hutner's trace elements**

| Component                                                                           | Quantity Used (per 100 mL DW)** |
|-------------------------------------------------------------------------------------|---------------------------------|
| Na <sub>2</sub> EDTA · 2H <sub>2</sub> O                                            | 5.000 g                         |
| ZnSO <sub>4</sub> · 7H <sub>2</sub> O                                               | 2.200 g                         |
| H <sub>3</sub> BO <sub>3</sub>                                                      | 1.140 g                         |
| MnCl <sub>2</sub> · 4H <sub>2</sub> O                                               | 0.506 g                         |
| FeSO <sub>4</sub> · 7H <sub>2</sub> O                                               | 0.499 g                         |
| CoCl <sub>2</sub> · 6H <sub>2</sub> O                                               | 0.161 g                         |
| CuSO <sub>4</sub> · 5H <sub>2</sub> O                                               | 0.157 g                         |
| (NH <sub>4</sub> ) <sub>6</sub> Mo <sub>7</sub> O <sub>24</sub> · 4H <sub>2</sub> O | 0.110 g                         |
| KOH                                                                                 | ~1.6 g                          |

\*\*Dissolve each of the above components, and then bring the final volume up to 100 mL with DW.

**Table S3. Recipe of dSTAP medium**

| Component                             | Stock Solution (mg/mL) | Quantity Used* |
|---------------------------------------|------------------------|----------------|
| NH <sub>4</sub> Cl                    | 200                    | 2.0 mL         |
| CaCl <sub>2</sub> · 2H <sub>2</sub> O | 100                    | 0.5 mL         |
| MgCl <sub>2</sub> · 6H <sub>2</sub> O | 254                    | 1.0 mL         |
| K <sub>2</sub> HPO <sub>4</sub>       | 100                    | 1.0 mL         |
| KH <sub>2</sub> PO <sub>4</sub>       | 100                    | 1.0 mL         |
| Hutner's trace elements for dSTAP     | See following recipe   | 1.0 mL         |
| Acetic acid                           | -                      | 1.0 mL         |
| Tris (hydroxymethyl) aminomethane     | -                      | 2.42 g         |

\*To prepare: make up to 1 liter with DW. Autoclave at 121°C for 20 minutes.

**Recipe of Hutner's trace elements for dSTAP**

| Component                                                                           | Quantity Used (per 100 mL DW)** |
|-------------------------------------------------------------------------------------|---------------------------------|
| Na <sub>2</sub> EDTA · 2H <sub>2</sub> O                                            | 5.000 g                         |
| ZnCl <sub>2</sub>                                                                   | 1.040 g                         |
| H <sub>3</sub> BO <sub>3</sub>                                                      | 1.140 g                         |
| MnCl <sub>2</sub> · 4H <sub>2</sub> O                                               | 0.506 g                         |
| FeCl <sub>3</sub> · 7H <sub>2</sub> O                                               | 0.485 g                         |
| CoCl <sub>2</sub> · 6H <sub>2</sub> O                                               | 0.161 g                         |
| CuCl <sub>2</sub> · 2H <sub>2</sub> O                                               | 0.107 g                         |
| (NH <sub>4</sub> ) <sub>6</sub> Mo <sub>7</sub> O <sub>24</sub> · 4H <sub>2</sub> O | 0.110 g                         |
| KOH                                                                                 | ~1.6 g                          |

\*\*Dissolve each of the above components, and then bring the final volume up to 100 mL with DW.