

1 **Glossary**

2 **Budding:** emergence of daughter cells post cell division.

3 **Cytokinesis:** process of cell division where the cytoplasm of a single cell is divided into
4 daughter cells.

5 **Egress:** last step of the Intraerythrocytic Development cycle (IDC) – occurring after
6 schizogony when the infected erythrocyte membrane is lysed to release newly formed
7 merozoites into the blood stream.

8 **Exoneme:** granular and dense organelle that is involved in the orchestration of egress.

9 **Gametocyte:** sexual precursor responsible for the mosquito infection during the blood meal.

10 **Gametogenesis:** process of gametes formation. In *Plasmodium*, this occurs in the mosquito
11 midgut where mature male and female gametocytes rapidly transform and egress from the
12 host erythrocyte. This happens within minutes after mosquito ingestion and is trigger by
13 environment signals such as a drop in temperature and mosquito midgut factor xanthurenic
14 acid (XA). After 3 rounds of DNA replication, the male gametocyte will develop flagella and
15 release eight motile male gametes which will eventually fertilize a female gametocyte.

16 **Intraerythrocytic Development Cycle (IDC):** *Plasmodium* development occurring in the
17 blood spanning from the invasion of erythrocytes by merozoites to the egress and release of
18 new merozoites into the blood.

19 **Kinase:** enzyme that catalyzes the transfer of gamma phosphate groups from ATP or GTP to
20 specific Serine, Threonine, Tyrosine or Histidine residues in a protein substrate.

21 **Oocyst:** ookinete which after encapsulation into the wall of the mosquito midgut will grow,
22 divide and differentiate to eventually rupture and release fully developed sporozoites (see also
23 sporogony).

24 **Ookinete:** motile zygote which invades the mosquito midgut wall and transform itself into an
25 oocyst.

26 **Phosphatase:** enzyme that catalyzes the transfer of a phosphate group from a phosphorylated
27 Serine, Threonine, Tyrosine or Histidine residue, thus releasing inorganic phosphate.

28 **PP1c Interacting protein (PIP):** protein that binds the catalytic subunit PP1c. It can act as
29 substrate and/or regulator to direct PP1 function and/or localization.

1 **Schizogony:** cell division process found at different stages of *Plasmodium* development that
2 starts with nuclei division and ends up with cytokinesis and the formation of multiple
3 daughter cells.

4 **Sporogony:** succession of *Plasmodium* development events spanning from mosquito
5 ingestion of gametocytes containing blood to the sporozoites invasion of salivary glands.
6 These processes can be sub-divided into 3 phases: “early sporogony” including
7 gametogenesis, fertilization, zygote transformation into ookinete, ookinete motility and
8 encapsulation in the wall of the mosquito midgut to develop into oocysts. “mid-sporogony”
9 corresponding to the oocyst stage where the oocyst growth, undergoes several rounds of
10 closed mitosis to form a syncytium and differentiate into thousands of sporozoites. “late-
11 sporogony” corresponding to the sporozoites release into the mosquito haemocoel and
12 invasion of salivary glands.

13 **Syncytium:** multinucleate cell.

14 **Yeast Two Hybrid (Y2H):** Heterologous system using yeast of opposite sexual polarity to
15 investigate protein-protein interaction. Following yeasts fusion, the resulting diploids will
16 express the two potential partners. The ability of both proteins to interact will result in the
17 expression of auxotrophy genes, allowing the diploids to develop on stringent media.