Names and chromosomal locations of selected *Rhodopseudomonas palustris* genes.

Dehydrogenases (electron donating enzymes)

Carbon monoxide dehydrogenase (*coxSML*) (*rpa4666-4668*) 5,261,956–5,261,956.

Carbon monoxide dehydrogenase (*rpa3802* and *rpa3803*) 4,299,460–4300,827.

Succinate dehydrogenase (*rpa0216-rpa0219*) 241,162-244,289:

Formate dehydrogenase (*rpa0732-rpa0736*) 806,161-812,078.

Ethanol dehydrogenase (*rpa3188*) 3,599,316 -3,601,490

Hydrogenase (*hup/hyp* genes) (*rpa0959-rpa0978*) 1,061,498-1,078,784.

NADH dehydrogenase (*nuoN-nuoA*) (*rpa2937-rpa2952*) 3,321,506–3,337,341

NADH dehydrogenase (*nuoN-nuoA*) (*rpa4252-rpa4264*) 4,796,479-4,810,793.

Thiosulfate oxidase (*rpa4459-rpa4467*) 5,033,288-5,042,472.

Oxidases (electron accepting enzymes)

Cytochrome bd ubiquinol-oxidase (*rpa1318* and *rpa1319*) 1,436,855-1,438,581.

Cytochrome cbb$_3$ oxidase (*rpa0014-rpa0019*) 16,925-22,475.

Cytochrome aa$_3$ oxidase (cox*ABCEFG*) (*rpa0831-rpa0837*) 926,324 –931,631.

Quinol oxidase (*qxtAB*) (*rpa4793* and *rpa4794*) 5,411,181-5,413,611.

Nitric oxide reductase (*nor* genes) (*rpa1453-rpa1458*) 1,612,792-1,618,525.

Nitrous oxide reductase.(*nos* genes) (*rpa2060-rpa2066*) 2,320,449-2,329,324.

Nitrite reductase (*nirK*) (*rpa3306*) 3,727,317-3,728,423.

Nitrite reductase (*nirK*) (*rpa4145*) 4,686,505-4,687,617

Photophosphorylation

Photosynthesis (reaction center genes, light harvesting 1 genes and associated carotenoid and bacteriochlorophyll biosynthesis)(*rpa1505-rpa1554*) 1,671,137-1,725,322.

Light harvesting 2 *pucAa* and *pucBa* (*rpa2653* and *rpa2654*) 3,017,745-3,018,093.

Light harvesting 2 *pucBc* (*rpa3009*) next to *rpa3010* (pseudo-light harvesting). 3,408,431-3,408,586

Light harvesting 2 *pucAd* and *pucBd* (*rpa3012* and *rpa3013*) 3,410,110-3,410,457.

Light harvesting 2 *pucBb* and *pucAb* (*rpa4291* and *rpa4292*) 4,838,558-4,838,926.

Light harvesting 2 *pucBe* and *pucAe* (*rpa1491* and *rpa1492*) 1,655,417-1,655,764.

Carbon dioxide fixation

Type I RubisCO: (*cbbSL*) (*rpa1559* and *rpa1560*) 1,731,700-1,733,593.

Type II RubisCO (*cbbM*) (*rpa4641*) 5,224,192-5,225,577.

Biodegradation of aromatic compounds and fatty acids.

Anaerobic benzoate and 4-hydroxybenzoate degradation (*bad* and *hba* genes) (*rpa0650-rpa0673*) 717,848-744,056.

Protocatechuate degradation (*meta* cleavage) (*rpa4695- rpa4703*) 5,298.468-5,306,919.

Medium chain fatty acid and dicarboxylic acid degradation. (*rpa3712 –rpa3717*) 4,191,624-4,192,413.

Phenylacetate degradation (CoA mediated). (*rpa1723* and *rpa1724*) 1,922,593 and (*rpa3765-rpa3768*) 4,261,763-4,264,596.

Homoprotocatechuate degradation (*rpa3755*-r*pa3762*) 4,251,014-4,258,821.
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Homogentisate degradation. (*rpa4670-rpa4675*) 5,267,227-5,274,135.

Nitrogen fixation and acquisition.

Vanadium nitrogenase (*rpa1370-rpa1380*) 1,515,576 - 1,527,905.

Iron nitrogenase (*rpa1435-rpa1439*) 1,590,406-1,596,854.

Molybdenum nitrogenase: (*rpa4602-rpa4633*) 5,188,040- 5,215,364.

Glutamine synthetase. *glnA4* (*rpa0984*) 1,086,639-1,088,099.

Glutamine synthetase *glnA* (*rpa2967*) 3,360,870-3,362,297.

Glutamine synthetase *glnAII* (*rpa4209*) 4,752,301-4,753,338.

Glutamine synthetase *gln AIII* (*rpa1401*) 1,547,728-1,549,113.