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**Carbon source effects on the mono/dirhamnolipid ratio produced by*****Pseudomonas aeruginosa* L05, a new human respiratory isolate**

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**HIGHLIGHTS**

- New strain *P. aeruginosa* L05 was able to produce rhamnolipids.
- The dirhamnolipids/monorhamnolipids ratio depended on the carbon source used.
- With long chain fatty acids up to 92 mol% monorhamnolipids were produced.
- <sup>1</sup>H NMR was used to measure the dirhamnolipids/monorhamnolipids ratio.
- Transcription of *rhIC* gene was delayed when fatty acids were used as substrate.

**Abstract**

*Pseudomonas* strains produce rhamnolipid mixtures (RLs) that generally consist of one or two molecules of rhamnose linked to one or two molecules of 3-hydroxyalkanoic acid. This study evaluates carbon source effects (glycerol, glucose, myristic acid, and *Brassica carinata* oil) on the synthesis of monorhamnolipids (mono-RLs) *versus* dirhamnolipids (di-RLs) in a human isolate of *Pseudomonas aeruginosa* PAL05. Spectrophotometry, an emulsifying index (E24) test, and an orcinol assay confirmed the production of RLs by PAL05. Purified RLs were characterized by <sup>1</sup>H NMR analysis. PAL05 primarily produces mono-RLs when provided carbon sources containing long chain fatty

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