

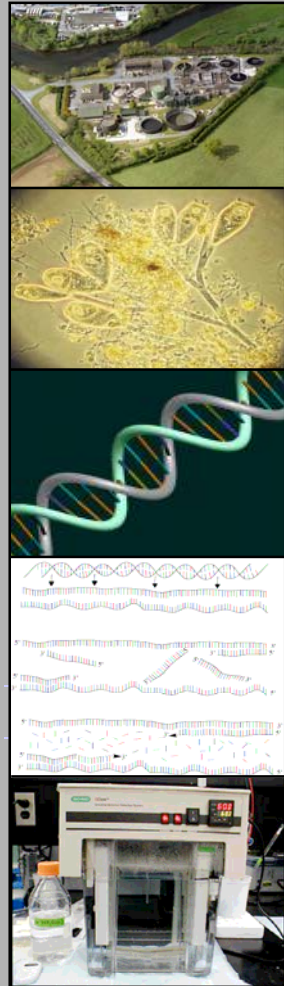
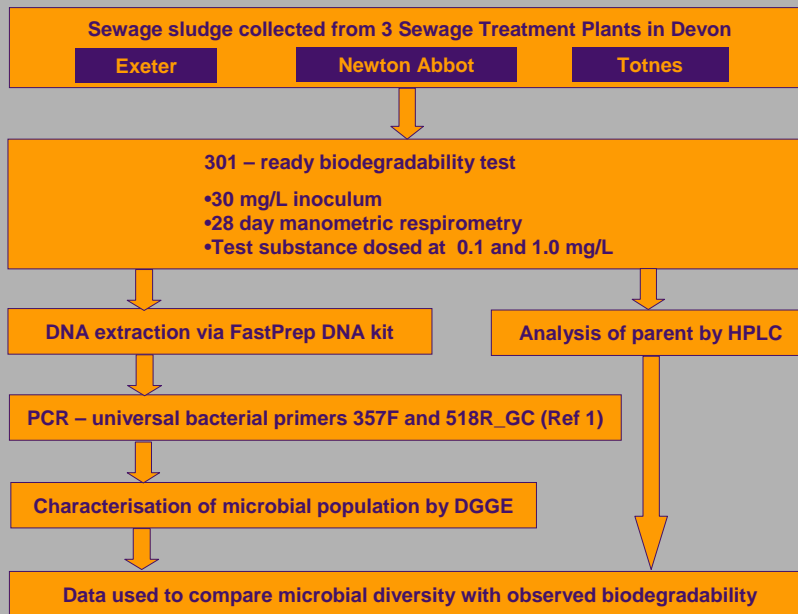
DOES INOCULUM VARIABILITY HAVE AN INFLUENCE ON API BIODEGRADATION?

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Introduction

- The biodegradability of active pharmaceutical ingredients (APIs) is often assessed by using ready biodegradability screening tests (OECD 301 range).
- The test is inoculated with sewage sludge where the population of microorganisms will vary from one sewage treatment plant (STP) to another.
- This uncertainty means there is potential for the inoculum to affect the observed test results. As such, the variability of inoculum used in ready biodegradability tests has been investigated here.

Method



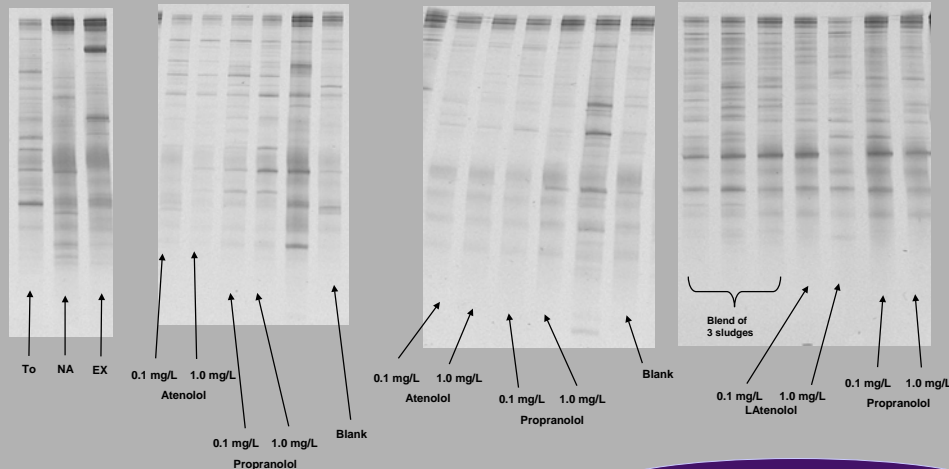
Results

Three Sources of Activated Sludge Prior to Incubation

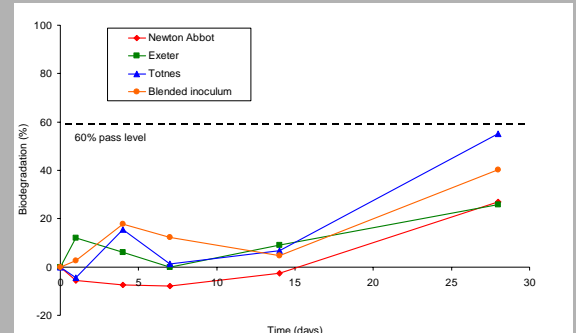
Newton Abbot

Exeter

Totnes



Biodegradation of Propranolol (1mg/L) by Selected Inocula



Conclusions

- Preliminary results suggest increased microbial diversity for Totnes activated sludge
- Overall, Totnes activated sludge degraded the test substances most effectively
- Blending the three inocula reduced the effectiveness of Totnes sludge but improved Newton Abbot and Exeter
- Different concentrations of the same compound appear to influence microbial profile