LixKit®

Method for determination of metabolically active microorganisms in leaching solutions by bioluminescence

USE

LixKit is a rapid, reliable and effective method for detection of the presence of acidophilic microorganisms in solutions from heap or dump leaching and in acid mine drainages.

ADVENTAGES OF LixKit®

- Rapid determination (10 minutes)
- Easy operation (kit ready for use)
- High reproducibility
- Allows measurements in the field
- Determines the metabolic activity of leaching microorganisms - "health" of the microflora
- Facilitates the metallurgical and operational decisions

ASSAY PRINCIPLES

This technique detects the level of active leaching microorganisms by measuring the ATP present in them. This is done by an enzymatic reaction with Luciferin/Luciferase, enzyme that the fireflies have to produce their characteristic light. On this technique, the produce light is proportional to the amount of microorganisms present in the solution.

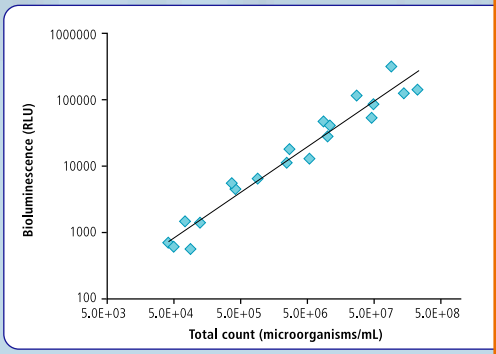
The method comprises the following steps:

a) concentrating acidophilic microorganisms from a given volume of aqueous sample;

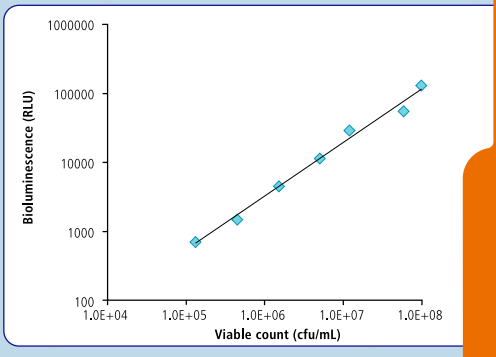
b) removing the inhibitory agents for the bioluminescence reaction by washing the previously concentrated acidophilic microorganisms by means of two treatments with aqueous washing agents; and

c) extracting adenosine-triphosphate (ATP) from the acidophilic microorganisms and measuring the generated light by such ATP by means of a luminometer

The **LixKit®** is manufactured by **VALTEK S. A.,** an ISO 9001:2000 and ISO 13485:2003 certified company.



Relation between total count of *Acidithiobacillus ferrooxidans* and bioluminescence (**LixKit®**)



Relation between viable count of *Acidithiobacillus ferrooxidans* and bioluminescence (**LixKit®**)

References:

Granted Patents
Germany: N° 102007035588.4-09
South Africa: N° 2007/06363
USA: N° 7,851,177
Patents pending in other countries

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