

Production of high quality blood agar ..

Using a combination of MEDIAJET Petri dish filler and DOSE IT P910 peristaltic pump, supplied by INTEGRA Biosciences AG, the Department of Medical Microbiology (IMM) (Lucerne, Switzerland) has established an effective technique for production of high quality blood agar.

Determination of haemolysis type is an important technique used in microbiology and medical diagnostics. The haemolytic patterns of various Gram positive cocci (e.g. Streptococci) may be differentiated by haemolysis of red blood cells on blood agar plates.

Alpha haemolysis is shown by a greenish halo around the colony and is produced by partial haemolysis of the red blood cells. Beta haemolysis is shown by a clear halo around the colony and is produced by complete haemolysis of the red blood cells. Gamma haemolysis is shown as no haemolysis or discolouration of the blood. For production of high quality blood agar precise control of dispensing temperature and the time the blood remains at the dispensing temperature are crucial parameters to minimise lysing of blood cells. With lysing of blood cells, the agar changes from a typical light red to a brown colour, which can complicate determination of haemolysis type.

Frau Trudy Rutz, Manager Biomedical Analyst at the IMM stated "Good quality blood agar makes the determination of haemolysis type straight forward and unproblematic even for less experienced personnel like our students". She added " Critical for the blood agar quality is the temperature of the agar blood mixture during the pouring of the agar plates". "Therefore we were looking for a media preparation system which would enable us to minimise this denaturation due to overheating as much as possible".

Using an INTEGRA Biosciences MEDIACLAVE media preparator the IMM was able to optimise the process by setting and maintaining the dispensing temperature to 45 °C. However the true innovation in the IMM blood agar preparation technique was made possible by the combination of the MEDIAJET Petri dish filler and the DOSE IT peristaltic pump. Using the two systems in combination allowed IMM to mix the blood immediately before pouring the plate resulting in minimal heat degradation (blood cell lysis). This is achieved with a tubing set specifically designed for blood agar preparation, resulting in a uniform high quality light red blood agar throughout the whole batch, independent of the production volume.

The MEDIACLAVE is a highly safe and economical system for sterile preparation of media from 1 to 9 litres. The MEDIACLAVE offers complete control and recording of all process parameters to guarantee a consistent GLP record that can be validated. Operated in conjunction with the MEDIAJET automated Petri dish filler - up to 540 standard sized agar plates can be conveniently and cost effectively prepared in less than 2.5 hours. The MEDIAJET and the MEDIACLAVE expand the capabilities of laboratories involved with the sterilisation of microbiological media and production of agar plates.

The new generation DOSE IT peristaltic pump makes the dispensing of culture media, buffers and other solutions easy and efficient. An intuitive multilingual user interface, coupled with large ergonomically designed display and keypad, makes the

DOSE IT extremely simple to program and operate. Providing high accuracy dispensing across a broad range of dose volumes (0.1 ml - 10 L) and flow rates (0.6 ml/min - 5L/ min) the versatility of the DOSE IT reduces the need for a laboratory to have several single purpose pumps.

Further information on production of high quality blood agar using the MEDIACLAVE / MEDIAJET / DOSE-IT combination please contact INTEGRA Biosciences AG.

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