Easy Cell Block Device for Cytopathology and Surgical Pathology Specimens

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Technology description

Technology Summary:

Preparation of cell blocks is indicated from swaps or collected fluids where cells or small tissue fragments are examined.Veterinary sciences and many research labs also need good methodology to prepare high quality cell blocks with concentrated diagnostic material along the cutting surface.Current methods are labor intensive, take a lot of time to perform and require a high degree of skill.

Low cost, one time use device for the concentration of diagnostically significant cells / tissue micro-fragments into a paraffin block with cells concentrated along the cutting surface.Modular, scalable Cell Block Preparation Device for use in cytopathology / surgical pathology laboratories saves in technologist’ s hands-on time (up to 25%) and can be manufactured for relatively low cost (well under $10 per unit when manufactured in mass)

Adaptability to use variety of cell blocking media (such as molten warm gels, ambient temperature thrombin-plasma methods etc.) with different fixation protocols.Introduces reproducibility in the cellularity of the cell block sections by using simple steps during the Cell Block Preparation Protocol.

The system has an Inbuilt commercially available AV Marker to assist the histotechnologists to assess and control the section cutting depth.Time saving, ease of use, cost saving and ease of interpreting the final stained preparation, improved interpretation by pathologists leading to enhanced accuracy of diagnoses and ultimately improved patient care.

BenefitAnalysis:

In the summer of 2011 there were between 6,800 and 7,000 labs doing anatomic pathology work in the US.In 2010, hospital labs represented about 55% of the clinical lab test market; 33% were independent labs, 10% physician labs, and 2% other.In 2008, hospital lab revenues increased from the prior year to a total of $30.4 billion and between 1998 to 2009, the average growth was 6.7%.

Cytopathology, usually a subspecialty within pathology laboratories, is used to aid in the diagnosis of cancer, but also helps in the diagnosis of certain infectious diseases and other inflammatory conditions. Cytopathology is generally used on samples of free cells or tissue fragments, in contrast to histopathology, which studies whole tissues.A cytotechnician is trained in medical examination and identification of cellular abnormalities.After reviewing various sources, there were about 6,000 to 7,200 cytotechnologists working in the US in 2009.This is an indication of the size of the labor force within the market.The most common cytopathology test is the Pap Smear test.An estimated 160 million Pap

smears are performed in the industrialized world and approximately 55 million are done in the USA annually.About $1 billion is spent on Pap smear testing each year in the US alone.Cytology is also commonly used to diagnose thyroid blood levels, blood immune cells and associated diseases, urinary tract infections, infectious diseases, placental and fetal health, kidney function, and many others. Preparation of cell blocks is indicated in many of these specimens for variety of tests including immunohistochemistry and ever increasing molecular tests. In addition to this, veterinary sciences and many research labs also need good methodology to prepare high quality cell blocks with concentrated diagnostic material along the cutting surface.

Advantages

1.Adaptability to use cell blocking media (such as molten warm gels, ambient temperature thrombin-plasma methods e.t.c) and different fixation protocols suitable for needed elective testing such as immunohistochemistry and molecular studies including ISH.
2.Introduce reproducibility in the cellularity of the cell block sections by using simple steps during the Cell Block Preparation Protocol.
3.Inbuilt AV Marker to assist the histotechnologists to assess and control the section cutting depth.This marker also helps the orientation of different serial sections on the slide for interpretation of immunohistochemistry.

Institution

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