

Letters to the Editor



A Simple Precaution to Prevent Breakage of Centrifuge Tubes during Operation

Sir: The step of centrifugation is a simple operation which is useful to both chemists and biochemists. Occasionally valuable samples are lost or destroyed during this operation due to the breakage of centrifuge tubes. Here I call the attention of your readers to a simple precaution which is a foolproof method for preventing such an accident.

The centrifuge tube breaks during the operation if, prior to operation it is placed in the centrifuge tube holder as depicted in Figure 1A, i.e., if the centrifuge tube rests against the wall of the centrifuge tube holder in the direction away from the central axis, leaving a gap (a) between the walls of centrifuge tube and the holder at the side closest to the central axis. When the centrifuge is in operation and the holder with centrifuge tube assumes a horizontal position, then this gap (a) lies in a horizontal axis as at AA (Fig. 1). The accident occurs when the centrifuge tube strikes against the lower wall of the holder through the gap (a) in order to shift its weight under the gravitational pull. At high speed of centrifugation this force is tremendous and is responsible for breakage. A simple precaution of placing the centrifuge tube as at B (Fig. 1) where the wall of the centrifuge tube rests against the side of the holder which is nearest to the central axis, prior to operation, prevents the accident. A cotton plug inserted in the gap marked (a) (Fig. 1, B) may sometimes be used to secure the proper position of the centrifuge tube in the holder. During operation, the centrifuge tube lies in a position as at BB (Fig. 1) and is safe.

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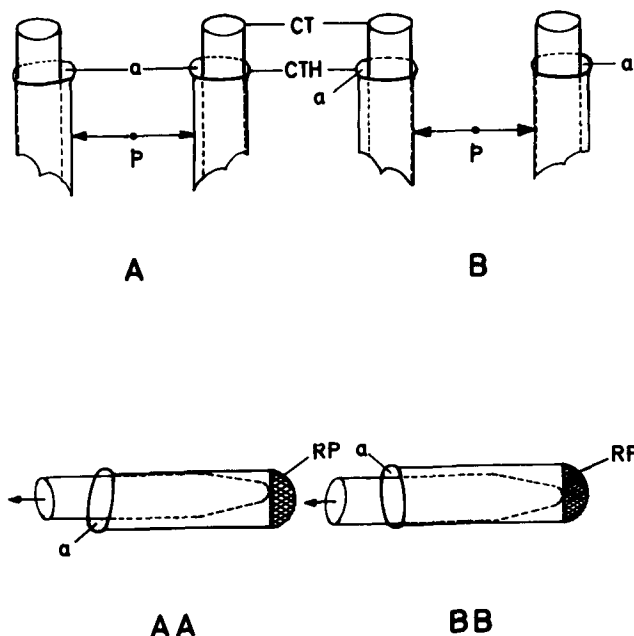


FIG. 1. (A) Two diagonally opposite centrifuge tube holders (CTH) are shown with dangerous placement of centrifuge tubes (CT); p = central axis of the centrifuge; a = gap at the wrong side. This gap or play is exaggerated deliberately for the sake of discussion. (AA) Horizontal position of CTH and CT during operation; → = direction of the central axis; RP = rubber pad. (B) Safe position of centrifuge tube (CT) in holder (CTH) (BB) Horizontal position of CTH and CT during operation; → = direction of the central axis (p); RP = rubber pad.