

# RAPID EPS Evidence Sheet

## —Airtightness to organic solvents—

### 【Summary】

RAPID SPS has high airtightness to both volatile solvent, AcCN, and hygroscopic solvent, DMSO, under  $-80^{\circ}\text{C}$ ,  $-20^{\circ}\text{C}$ ,  $4^{\circ}\text{C}$  and  $25^{\circ}\text{C}$ .

### 【Method】

We evaluated the performance of airtightness of RAPID EPS by measuring the weight of plates over time. 300ul of Dimethyl sulfoxide (DMSO) and Acetonitrile (AcCN) were dispensed to all wells of a 96 well plate. The plates were sealed with RAPID SPS and stored at temperature settings of  $-80^{\circ}\text{C}$ ,  $-20^{\circ}\text{C}$ ,  $4^{\circ}\text{C}$ ,  $25^{\circ}\text{C}$ . To avoid adhesion of dirt and frost, the plate was packaged in a plastic bag. The weight of was measured on day 1, day 3 and day 10.

In the case of  $-80^{\circ}\text{C}$ ,  $-20^{\circ}\text{C}$ ,  $4^{\circ}\text{C}$ ,  $25^{\circ}\text{C}$ , vapor outside plates was removed before the measurement by leaving plates in desiccators for 30 to 60 minutes.

The total amount of solvent was 28.8ml, which was used to calculate the total weight of solvent using the solvent density value, 0.784g/ml for AcCN and 1.10g/ml for DMSO.

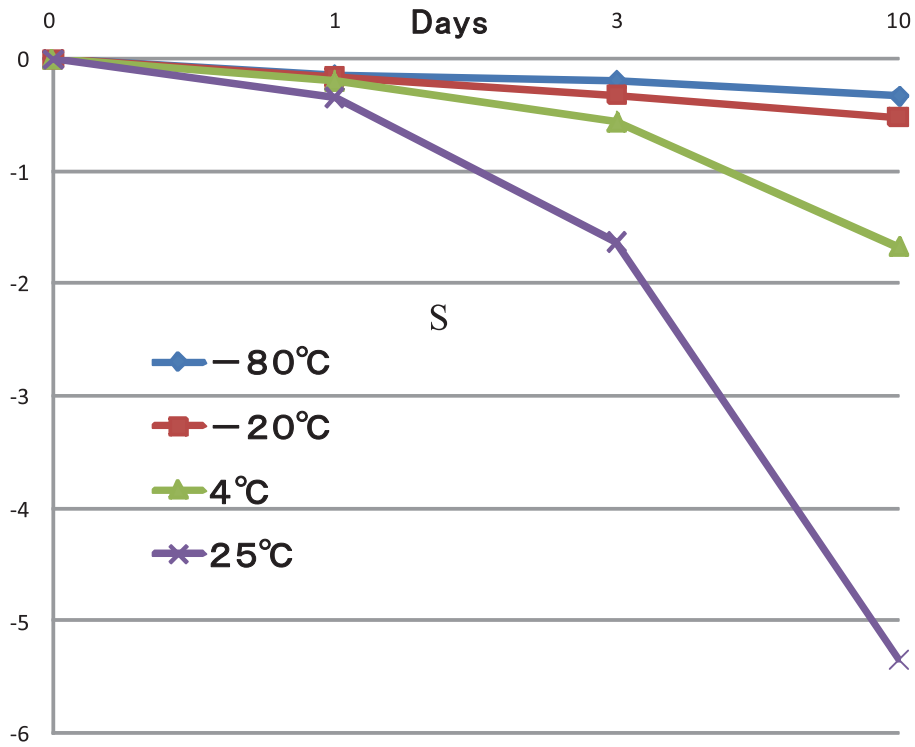
### 【Result】

RAPID EPS showed high airtightness to acetonitrile under the temperature of  $-80^{\circ}\text{C}$ ,  $-20^{\circ}\text{C}$ ,  $4^{\circ}\text{C}$ ,  $25^{\circ}\text{C}$  (Graph 1). At  $25^{\circ}\text{C}$  on day 10, volatilization rate was about 5.4%.

The airtightness of RAPID SPS was demonstrated to hygroscopic solvent, DMSO (Graph 2). The maximum increase in weight by hygroscopicity was observed  $25^{\circ}\text{C}$  on day 10, which was merely about 0.3% (Graph 2).

< Graph 1 >

### Volatilization Rate ( % ) : Acetonitrile



< Graph 2 >

### Higroscopicity Rate ( % ) : DMSO

