**SUPPLEMENTARY DATA**

**Antibacterial Effect of *2R*,*3R*-Dihydromyricetin on the Cellular Functions of *Staphylococcus aureus***

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**Methods**

*Determination of ATP*

In brief, logarithmic phase *S. aureus* was harvested, washed twice and resuspended in 0.85% sterile saline at a cell density of 1× 109 CFU/mL. Then, 1 mL of the bacterial suspension was subjected to treatment with DMY at 37 °C for 30 min. After treatment, cells were collected, washed and resuspended in 1 mL of 0.85% sterile saline. Subsequently, the samples were treated by ultrasound on ice, and centrifuged at 10000 rpm for 3 min. The ATP concentration of the resulting supernatants, which represents the intracellular concentration, was determined using an ATP assay kit (Life Technologies, Eugene, OR, USA) according to manual instructions with a microplate reader (PE envision, Perkin Elmer Co., Waltham, MA, USA).

*Determination of intracellular pH*

In brief, 10 mL of logarithmic phase *S. aureus* bacterial suspensions in 50 mM HEPES buffer (containing 5 mM EDTA, pH 8.0) were incubated with 1.0 μM carboxyfluorescein diacetate succinimidyl ester (Life Technologies, Eugene, OR, USA) at 37 °C for 10 min. Then, the cells were collected, washed and resuspended in 10 mL of 50 mM potassium phosphate buffer (containing 10 mM MgCl2, pH 7.0). After incubation with 10 mM glucose at 37 °C for 30 min, the cells were washed twice, resuspended in 50 mM potassium phosphate buffer (pH 7.0), and then treated with DMY for 30 min. The fluorescence intensities at 525 nm were measured at excitation wavelengths of 440 nm and 490 nm, respectively, using the microplate reader referred above. Background fluorescence resulting from the filtrate of cell suspension was measured and corrected. The pHin of *S. aureus* cells was determined according to the ratio of fluorescence intensity at 490 nm and 440 nm with the calibration curve.

*Determination of SDH and MDH activities*

Briefly, logarithmic phase *S. aureus* cells suspended in 0.85% sterile saline were treated with DMY at 37 °C for 3 h. Then, the SDH and MDH activities of *S. aureus* cells were determined using the SDH Activity Colorimetric Assay Kit and MDH Activity Colorimetric Assay Kit (GenMed scientifics Inc., Shanghai, China) following the manufacturer’s protocols, respectively, using a microplate reader (Multiskan go, Thermo Fisher Scientific Co., Waltham, MA, USA).

**Results**

*Effect of DMY on the SDH and MDH activities of S. aureus*



**Fig. S3.** Effect of *2R*, *3R*-dihydromyricetin on the succinate dehydrogenase activity (A) and malate dehydrogenase activity (B) of *S. aureus* ATCC 6538. Bars represent the standard deviation (n = 3).