

ABSTRAK

Kehamilan membutuhkan vaskulo-angiogenesis yang baik untuk perkembangan janin. VEGF adalah regulator penting vaskulo-angiogenesis, sedangkan VEGFR-2 adalah mediator utama dari efek angiogenik VEGF. Saat ini, terdapat zat-zat aktif yang bersifat anti-angiogenik, salah satunya quercetin. Quercetin diketahui dapat menghambat proliferasi, migrasi, invasi dan pembentukan tabung sel-sel endotel secara signifikan. Penelitian ini bertujuan untuk mengetahui pengaruh quercetin terhadap proses vaskulo-angiogenesis embrio ayam umur 48 jam secara *in ovo*. Telur ayam fertil dibagi menjadi 4 kelompok. Kelompok A diberi PBS 200 μ L, kelompok B diberi quercetin 0.025 μ L / embrio, kelompok C diberi quercetin 0.0375 μ L / embrio, dan kelompok D diberi quercetin 0.05 μ L / embrio. Setelah inkubasi, *survival rate*, jumlah somit, dan persentase area VEGFR-2 dievaluasi. Hasil *survival rate*, jumlah somit, dan persentase area VEGFR-2 menunjukkan penurunan yang pertama pada kelompok B, dan penurunan terbesar pada kelompok C. Hasil kelompok D menunjukkan kenaikan *survival rate*, jumlah somit, dan persentase area VEGFR-2. Disimpulkan bahwa pemberian quercetin secara signifikan menyebabkan menurunnya *survival rate*, jumlah somit, dan persentase area VEGFR-2 pada embrio ayam umur 48 jam. Dosis quercetin yang menimbulkan efek nyata pada *survival rate* adalah dosis 0.0375 μ L / embrio, dan terjadi fenomena *all-or-none* pada *survival rate* dosis quercetin sebesar 0.05 μ L / embrio.

Kata Kunci: quercetin, embrio, vaskulo-angiogenesis, VEGFR-2



ABSTRACT

Pregnancy requires adequate vasculo-angiogenesis for fetal development. VEGF is an important regulator of vasculo-angiogenesis, whereas VEGFR-2 is a major mediator of the angiogenic effect of VEGF. Currently, there are active substances that are anti-angiogenic, one of them is quercetin. Quercetin has been known to significantly inhibit proliferation, migration, invasion and tube formation of endothelial cells. This study aimed to determine the effect of quercetin on vasculo-angiogenesis in chick embryos aged 48 hours in ovo. Fertile chicken eggs were divided into 4 groups. Group A was given 200 mL PBS, group B was given quercetin 0.025 mL / embryo, group C was given quercetin 0.0375 mL / embryo, and group D was given quercetin 0:05 mL / embryo. After incubation, the survival rate, the number of somites, and the area percentage of VEGFR-2 was evaluated. The results of the survival rate, the number of somites, and the area percentage of VEGFR-2 showed the first decline in group B, and the largest decline in group C. The results of group D showed increase survival rate, number of somites, and the area percentage of VEGFR-2. It was concluded that administration of quercetin significantly resulting in lower survival rate, number of somites, and the area percentage of VEGFR-2 in the 48-hour-old chicken embryos. Quercetin dose that causes a real effect on the survival rate is 0.0375 mL dose / embryo, and the all-or-none phenomenon occurred on the survival rate of quercetin dose of 0.05 mL / embryo.

Keywords: quercetin, embryo, vasculo-angiogenesis, VEGFR-2