Respons tiga varietas padi Subspesies Indica terhadap perlakuan transformasi Gen cry IAc menggunakan Agrobacterium tumefaciens = Response three varieties of Subspesies Indica Rice to transformation of Cry IAc Gene treatment mediated by Agrobacterium tumefaciens

Bahagia Ayu Lestari, author

Abstrak

Penelitian mengenai transformasi gen cry IAc ke padi subpesies Indica, Inpari 13, IR 64, dan Inpari 6, menggunakan Agrobacterium tumefaciens telah dilakukan, namun tanaman transgenik belum berhasil diperoleh. Gen cry IAc merupakan salah satu kelompok gen cry 1 yang memiliki toksin paling tinggi terhadap hama Lepidotera khususnya hama penggerek batang. Transformasi gen cry IAc dilakukan ke kalus padi menggunakan Agrobacterium tumefaciens strain LBA4404 yang membawa plasmid pAY560325_cryIAc. Kalus padi ditumbuhkan dalam media induksi kalus N6D selama 5 hari sebelum diinfeksi dengan Agrobacterium tumefaciens strain LBA4404. Selanjutnya, kalus ditanam dalam media resting, seleksi, dan media regenerasi. Gen cry IAc dan hptII telah dikonfirmasi menggunakan teknik isolasi DNA dan PCR. Transformasi gen cry IAc berhasil dilakukan dan terdapat perbedaan respons diantara ketiga varietas terhadap perlakuan kultur jaringan dan transformasi. Inpari 13 memberikan respons terbaik terhadap perlakuan transformasi berdasarkan hasil PCR gen cry IAc dan gen hptII, sedangkan IR 64 memberikan respons terbaik terhadap perlakuan kultur jaringan berdasarkan jumlah kalus embriogenik pada media induksi kalus.

.....Transformation of Cry IAc Gene Treatment Mediated by Agrobacterium tumefaciens
Research about transformation of cry IAc gene into subspesies Indica rice, Inpari 13, IR 64, and Inpari 6, had been conducted, but transgenic plant have not been yet obtained. Cry IAc is one of the group cry 1 gene with the highest toxin to pest of Lepidoptera especially stem borer. Transformation of cry IAc gene was conducted using Agrobacterium tumefaciens strain LBA4404 harboring plasmid pAY560325_cryIAc. Callus were grown in N6D induction media for 5 days before transformed by soaking in culture of Agrobacterium tumefaciens LBA4404. Subsequently, callus were grown in resting, selection, and regeneration medium. Cry IAc and hptII genes were confirmed through DNA extraction and PCR methods. Transformation of cry IAc gene successfully conducted and there were different responses of those varieties to tissue culture and transformation treatment. Inpari 13 showed the best response to transformation treatment based on the result of PCR of cry IAc and hptII genes, IR 64 gave the best response to tissue culture treatment based on the amount of embriogenic callus at callus induction medium.