

Title (en)
ARABIDOPSIS THALIANA CYCLIC NUCLEOTIDE-GATED ION CHANNEL DND GENES; REGULATORS OF PLANT DISEASE RESISTANCE AND CELL DEATH

Title (de)
FÜR ZYKLISCHE, NUKLEOTID-VERMITTELTE IONENKANÄLE KODIERENDE DND-GENE AUS ARABIDOPSIS THALIANA, REGULATOREN DER PFLANZENKRANKHEITSRESISTENZ UND DES ZELLTODS

Title (fr)
GENES DND OU DE PROTECTION NUCLEOTIDIQUE CYCLIQUE DE ARABIDOPSIS THALIANA; REGULATEURS DE RESISTANCE DE MALADIE DES PLANTES ET DE MORT CELLULAIRE

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Application
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Abstract (en)
[origin: WO0107596A1] The cell death response known as the hypersensitive response (HR) is a central feature of gene-for-gene plant disease resistance. Plants also defend against pathogens via multigenically controlled broad-spectrum defense responses, such as those modulated by salicylic acid. The *DND* (Defense, No Death) loci of *Arabidopsis thaliana* regulate the extent of broad-spectrum disease resistance against a broad range of viral, bacterial, oomycete and fungal pathogens. Plants lacking a functional copy of the *DND1* or *DND2* gene are defective in HR cell death but exhibit successful gene-for-gene disease resistance. Plants lacking a functional copy of the *DND1* or *DND2* gene also exhibit an enhanced broad-spectrum disease resistance phenotype. The *DND1* and *DND2* gene products are identical to previously known cDNAs termed *AtCNGC2* and *1*, respectively, that encode apparent cyclic nucleotide-gated ion channel proteins. The identification of the *CNGC/DND* genes as regulators of disease resistance and host cell death, and the availability of *CNGC/DND* gene sequence information, provide new possibilities for controlling a wide variety of plant diseases.

IPC 1-7
C12N 15/05; **C12N 15/09**; **C12N 15/29**; **C12N 15/82**; **A01H 5/00**; **A01H 5/10**

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A01H 5/00 (2006.01); **A01H 5/10** (2006.01); **C07K 14/415** (2006.01); **C12N 5/10** (2006.01); **C12N 15/05** (2006.01); **C12N 15/09** (2006.01); **C12N 15/29** (2006.01); **C12N 15/82** (2006.01); **C12Q 1/68** (2006.01)

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