1. Phylogeny  
   RIPK4 (Receptor-interacting serine/threonine-protein kinase 4) is classified within the receptor-interacting protein kinase (RIPK) family, a subgroup of the serine/threonine kinome that is distinguished by highly conserved kinase domains alongside divergent C‐terminal regulatory modules such as ankyrin repeats. In phylogenetic analyses, RIPK4 is grouped with RIPK1–RIPK5, which share structural features indicative of divergent functions in inflammatory signaling and cell death, whereas RIPK6 and RIPK7 (also referred to as LRRK1 and LRRK2) show more distant relationships and additional domains such as leucine-rich repeats and ROC/COR motifs (lv2022comparativeandevolutionary pages 10-12, zare2022theroleof pages 28-32). The evolutionary lineage of RIPK4 can be traced across vertebrates; orthologs have been identified in species such as human, mouse, and amphibians like Xenopus tropicalis, where the kinase domain conservation is notably high (fransen2011exploringtherole pages 131-137, huang2018crystalstructureof pages 1-3). This conservation of key structural elements underlines that RIPK4 fulfills an evolutionarily preserved role in epidermal differentiation and immune regulation (cuny2021ripkproteinkinase pages 1-2, lv2022comparativeandevolutionary pages 1-3).
2. Reaction Catalyzed  
   RIPK4 catalyzes the transfer of a phosphate group from ATP to target serine/threonine residues on substrate proteins, a canonical reaction for serine/threonine protein kinases. In chemical terms, the reaction can be summarized as: ATP + [protein substrate] → ADP + [protein substrate]-phosphoserine/threonine + H⁺. Although the precise reaction mechanism in RIPK4 is not fully characterized, it is known to phosphorylate substrates such as plakophilin-1 (PKP1) and interferon regulatory factor 6 (IRF6), thus modulating keratinocyte differentiation, cell adhesion, and NF-κB activation (cuny2021ripkproteinkinase pages 6-8, zare2022theroleof pages 62-65).
3. Cofactor Requirements  
   The kinase activity of RIPK4, like that of other serine/threonine kinases, is dependent on the presence of divalent cations, with Mg²⁺ serving as the primary cofactor to stabilize the ATP–substrate complex during catalysis. While specific detailed studies of RIPK4 cofactor dependency are limited in the current literature, this requirement is consistent with the mechanistic attributes of the kinome group it belongs to (xu2020insightintothe pages 1-2, cuny2021ripkproteinkinase pages 2-3).
4. Substrate Specificity  
   RIPK4 preferentially phosphorylates serine/threonine residues on its physiological substrates, with known targets including PKP1 and IRF6, which play important roles in maintaining skin homeostasis and promoting keratinocyte differentiation. The recognition of substrates is mediated through its conserved kinase domain and may involve specific amino acid sequence motifs or structural determinants that facilitate substrate binding; for instance, the requirement to engage substrates at specific serine residues has been implicated in the regulation of NF-κB and Wnt signaling pathways (zare2022theroleof pages 62-65, chirieleison2016syntheticbiologyreveals pages 4-6). Although consensus motifs have not been definitively established for RIPK4, experiments using domain swapping approaches have suggested that its kinase domain shares functional similarities with that of RIPK2, implying a degree of substrate overlap despite the distinct C-terminal ankyrin repeats that confer additional regulatory specificity (chirieleison2016syntheticbiologyreveals pages 6-7, zare2022theroleofa pages 28-32).
5. Structure  
   RIPK4 exhibits a modular structure characterized by an N-terminal kinase domain, a central intermediate region, and a C-terminal regulatory region that contains 11 ankyrin repeats. The kinase domain is responsible for the catalytic activity, displaying the canonical bilobal structure typical of serine/threonine kinases; it contains conserved motifs such as the P-loop, catalytic lysine, and activation loop that are essential for ATP binding and phosphotransfer (cuny2021ripkproteinkinase pages 1-2, huang2018crystalstructureof pages 1-3). The intermediate domain, although less well defined in terms of function, serves as a connector between the catalytic core and the regulatory ankyrin domain. The series of C-terminal ankyrin repeats are thought to contribute to protein–protein interactions and may modulate kinase activity by interfering with homo-dimerization or substrate access, features that are crucial for its role in NF-κB activation and epidermal differentiation (cuny2021ripkproteinkinase pages 8-8, fransen2011exploringtherole pages 137-139). Recent crystallographic analyses have also indicated that RIPK4 undergoes dimerization, which is necessary for its full catalytic activity and might represent an allosteric regulatory mechanism unique among RIP kinases (huang2018crystalstructureof pages 3-4, chirieleison2016syntheticbiologyreveals pages 7-9).
6. Regulation  
   RIPK4 activity is tightly regulated at multiple levels, including post-translational modifications and protein–protein interactions. Phosphorylation events, both autophosphorylation and trans-phosphorylation by upstream kinases such as protein kinase C (PKC) isoforms (PKC-δ, PKC-β, and PKC-η), have been implicated in modulating its activity during epithelial differentiation (xu2020insightintothe pages 1-2, urwylerrosselet2023functionsofthe pages 10-11). In addition, RIPK4 is a direct transcriptional target of TP63, linking its expression to the differentiation state of keratinocytes (information section). Caspase-8–mediated cleavage events have also been reported to regulate the balance between pro-survival and pro-apoptotic signaling, as cleavage of RIPK4 can block NF-κB activation in apoptotic settings (stunnenberg…2021theroleof pages 5-6). Regulation by protein–protein interactions is further supported by the inhibitory role of its ankyrin repeat domain, which may act in an autoinhibitory fashion when not properly engaged with substrates or activators (cuny2021ripkproteinkinase pages 3-4, chirieleison2016syntheticbiologyreveals pages 9-11).
7. Function  
   RIPK4 plays a critical role in embryonic skin development and the maintenance of epidermal homeostasis in adults. It functions primarily by phosphorylating key substrates such as PKP1, thereby promoting keratinocyte differentiation and enhancing cell adhesion, which are essential for the formation and integrity of the skin barrier (information section, kalay2012mutationsinripk4 pages 3-4). In addition to its role in the structural organization of the epidermis, RIPK4 is involved in intracellular signaling pathways that activate NF-κB, a transcription factor with pivotal roles in inflammation and cell survival. Its regulatory functions extend to the modulation of Wnt/β-catenin pathways, which are critical for cell fate determination during development (urwylerrosselet2023functionsofthe pages 10-11, zare2022theroleof pages 32-35). The conservation of RIPK4 expression in ectoderm-derived tissues, along with studies using model organisms such as mice and Xenopus, reinforces its central function in tissue differentiation and morphogenesis (fransen2011exploringtherole pages 131-137, lv2022comparativeandevolutionary pages 12-13). Furthermore, genetic aberrations in RIPK4, including point mutations that compromise its kinase activity, are associated with developmental syndromes such as popliteal pterygium syndrome and Bartsocas-Papas syndrome, underscoring its essential role in human skin biology (kalay2012mutationsinripk4 pages 3-4, urwylerrosselet2023functionsofthe pages 13-14).
8. Other Comments  
   RIPK4 has garnered interest as a potential therapeutic target due to its dual roles in developmental signaling and inflammation. Experimental inhibitors that target related kinases within the RIP family have spurred efforts to design compounds with specificity for RIPK4, although the development of potent and selective small-molecule inhibitors remains in early stages (xie2021smallmoleculekinaseinhibitors pages 53-54). In addition to its implications in epidermal differentiation, aberrant RIPK4 activity has been linked to carcinogenesis, particularly in skin tumors, prompting further research into its roles beyond normal developmental processes (zare2022theroleof pages 62-65). Current research is also focusing on deciphering the precise molecular mechanisms by which RIPK4 influences NF-κB and Wnt signaling pathways, with the expectation that such insights might lead to novel interventions in inflammatory and oncogenic disorders (chirieleison2016syntheticbiologyreveals pages 4-6, urwylerrosselet2023functionsofthe pages 10-11).
9. References
10. cuny2021ripkproteinkinase pages 1-2
11. fransen2011exploringtherole pages 117-122
12. fransen2011exploringtherole pages 122-124
13. fransen2011exploringtherole pages 131-137
14. huang2018crystalstructureof pages 1-3
15. huang2018crystalstructureof pages 3-4
16. lv2022comparativeandevolutionary pages 10-12
17. lv2022comparativeandevolutionary pages 18-20
18. lv2022comparativeandevolutionary pages 3-4
19. lv2022comparativeandevolutionary pages 4-6
20. lv2022comparativeandevolutionary pages 9-10
21. urwylerrosselet2023functionsofthe pages 1-3
22. urwylerrosselet2023functionsofthe pages 12-13
23. zare2022theroleof pages 28-32
24. zare2022theroleof pages 62-65
25. zare2022theroleofa pages 28-32
26. chirieleison2016syntheticbiologyreveals pages 4-6
27. chirieleison2016syntheticbiologyreveals pages 6-7
28. chirieleison2016syntheticbiologyreveals pages 9-11
29. cuny2021ripkproteinkinase pages 3-4
30. cuny2021ripkproteinkinase pages 6-8
31. cuny2021ripkproteinkinase pages 8-8
32. fransen2011exploringtherole pages 137-139
33. huang2018crystalstructureof pages 9-10
34. lv2022comparativeandevolutionary pages 1-3
35. lv2022comparativeandevolutionary pages 12-13
36. lv2022comparativeandevolutionary pages 15-15
37. lv2022comparativeandevolutionary pages 15-16
38. lv2022comparativeandevolutionary pages 24-24
39. lv2022comparativeandevolutionary pages 6-7
40. salla2018molecularandepigenetic pages 69-74
41. salla2018molecularandepigenetica pages 69-74
42. stunnenberg…2021theroleof pages 3-5
43. stunnenberg…2021theroleof pages 5-6
44. urwylerrosselet2023functionsofthe pages 6-8
45. xie2021smallmoleculekinaseinhibitors pages 53-54
46. xu2020insightintothe pages 1-2
47. zare2022theroleof pages 32-35
48. zare2022theroleofa pages 32-35
49. zare2022theroleofa pages 62-65
50. bryan2018kinaseinhibitorsfor pages 16-17
51. chirieleison2016syntheticbiologyreveals pages 1-2
52. chirieleison2016syntheticbiologyreveals pages 7-9
53. cuny2021ripkproteinkinase pages 2-3
54. dara2018thereceptorinteracting pages 1-3
55. kalay2012mutationsinripk4 pages 3-4
56. lv2022comparativeandevolutionary pages 13-15
57. torre2021theroleof pages 5-6
58. urwylerrosselet2023functionsofthe pages 10-11
59. urwylerrosselet2023functionsofthe pages 13-14

References

1. (cuny2021ripkproteinkinase pages 1-2): Gregory D. Cuny and Alexei Degterev. Ripk protein kinase family: atypical lives of typical kinases. Seminars in Cell & Developmental Biology, 109:96-105, Jan 2021. URL: https://doi.org/10.1016/j.semcdb.2020.06.014, doi:10.1016/j.semcdb.2020.06.014. This article has 85 citations.
2. (fransen2011exploringtherole pages 117-122): M Fransen. Exploring the role of caspases and ripk4 during xenopus development. Unknown journal, 2011.
3. (fransen2011exploringtherole pages 122-124): M Fransen. Exploring the role of caspases and ripk4 during xenopus development. Unknown journal, 2011.
4. (fransen2011exploringtherole pages 131-137): M Fransen. Exploring the role of caspases and ripk4 during xenopus development. Unknown journal, 2011.
5. (huang2018crystalstructureof pages 1-3): Christine S. Huang, Nina Oberbeck, Yi-Chun Hsiao, Peter Liu, Adam R. Johnson, Vishva M. Dixit, and Sarah G. Hymowitz. Crystal structure of ripk4 reveals dimerization-dependent kinase activity. Structure, 26:767-777.e5, May 2018. URL: https://doi.org/10.1016/j.str.2018.04.002, doi:10.1016/j.str.2018.04.002. This article has 26 citations and is from a domain leading peer-reviewed journal.
6. (huang2018crystalstructureof pages 3-4): Christine S. Huang, Nina Oberbeck, Yi-Chun Hsiao, Peter Liu, Adam R. Johnson, Vishva M. Dixit, and Sarah G. Hymowitz. Crystal structure of ripk4 reveals dimerization-dependent kinase activity. Structure, 26:767-777.e5, May 2018. URL: https://doi.org/10.1016/j.str.2018.04.002, doi:10.1016/j.str.2018.04.002. This article has 26 citations and is from a domain leading peer-reviewed journal.
7. (lv2022comparativeandevolutionary pages 10-12): Shangge Lv, Yu Jiang, Yuzheng Li, Rui-hua Huang, Lingyu Peng, Zhaoyin Ma, Nan Lu, Xiaoying Lin, and Jie Yan. Comparative and evolutionary analysis of rip kinases in immune responses. Frontiers in Genetics, Oct 2022. URL: https://doi.org/10.3389/fgene.2022.796291, doi:10.3389/fgene.2022.796291. This article has 7 citations and is from a peer-reviewed journal.
8. (lv2022comparativeandevolutionary pages 18-20): Shangge Lv, Yu Jiang, Yuzheng Li, Rui-hua Huang, Lingyu Peng, Zhaoyin Ma, Nan Lu, Xiaoying Lin, and Jie Yan. Comparative and evolutionary analysis of rip kinases in immune responses. Frontiers in Genetics, Oct 2022. URL: https://doi.org/10.3389/fgene.2022.796291, doi:10.3389/fgene.2022.796291. This article has 7 citations and is from a peer-reviewed journal.
9. (lv2022comparativeandevolutionary pages 3-4): Shangge Lv, Yu Jiang, Yuzheng Li, Rui-hua Huang, Lingyu Peng, Zhaoyin Ma, Nan Lu, Xiaoying Lin, and Jie Yan. Comparative and evolutionary analysis of rip kinases in immune responses. Frontiers in Genetics, Oct 2022. URL: https://doi.org/10.3389/fgene.2022.796291, doi:10.3389/fgene.2022.796291. This article has 7 citations and is from a peer-reviewed journal.
10. (lv2022comparativeandevolutionary pages 4-6): Shangge Lv, Yu Jiang, Yuzheng Li, Rui-hua Huang, Lingyu Peng, Zhaoyin Ma, Nan Lu, Xiaoying Lin, and Jie Yan. Comparative and evolutionary analysis of rip kinases in immune responses. Frontiers in Genetics, Oct 2022. URL: https://doi.org/10.3389/fgene.2022.796291, doi:10.3389/fgene.2022.796291. This article has 7 citations and is from a peer-reviewed journal.
11. (lv2022comparativeandevolutionary pages 9-10): Shangge Lv, Yu Jiang, Yuzheng Li, Rui-hua Huang, Lingyu Peng, Zhaoyin Ma, Nan Lu, Xiaoying Lin, and Jie Yan. Comparative and evolutionary analysis of rip kinases in immune responses. Frontiers in Genetics, Oct 2022. URL: https://doi.org/10.3389/fgene.2022.796291, doi:10.3389/fgene.2022.796291. This article has 7 citations and is from a peer-reviewed journal.
12. (urwylerrosselet2023functionsofthe pages 1-3): Corinne Urwyler-Rösselet, Giel Tanghe, Michael Devos, Paco Hulpiau, Yvan Saeys, and Wim Declercq. Functions of the rip kinase family members in the skin. Cellular and Molecular Life Sciences, Sep 2023. URL: https://doi.org/10.1007/s00018-023-04917-2, doi:10.1007/s00018-023-04917-2. This article has 5 citations and is from a domain leading peer-reviewed journal.
13. (urwylerrosselet2023functionsofthe pages 12-13): Corinne Urwyler-Rösselet, Giel Tanghe, Michael Devos, Paco Hulpiau, Yvan Saeys, and Wim Declercq. Functions of the rip kinase family members in the skin. Cellular and Molecular Life Sciences, Sep 2023. URL: https://doi.org/10.1007/s00018-023-04917-2, doi:10.1007/s00018-023-04917-2. This article has 5 citations and is from a domain leading peer-reviewed journal.
14. (zare2022theroleof pages 28-32): A Zare. The role of receptor interacting serine/threonine kinase 2 (ripk2) in inflammatory breast cancer (ibc). Unknown journal, 2022.
15. (zare2022theroleof pages 62-65): A Zare. The role of receptor interacting serine/threonine kinase 2 (ripk2) in inflammatory breast cancer (ibc). Unknown journal, 2022.
16. (zare2022theroleofa pages 28-32): A Zare. The role of receptor interacting serine/threonine kinase 2 (ripk2) in inflammatory breast cancer (ibc). Unknown journal, 2022.
17. (chirieleison2016syntheticbiologyreveals pages 4-6): SM Chirieleison. Synthetic biology reveals the uniqueness of the rip kinase domain. Unknown journal, 2016. URL: https://doi.org/10/4291/43038, doi:10/4291/43038.
18. (chirieleison2016syntheticbiologyreveals pages 6-7): SM Chirieleison. Synthetic biology reveals the uniqueness of the rip kinase domain. Unknown journal, 2016. URL: https://doi.org/10/4291/43038, doi:10/4291/43038.
19. (chirieleison2016syntheticbiologyreveals pages 9-11): SM Chirieleison. Synthetic biology reveals the uniqueness of the rip kinase domain. Unknown journal, 2016. URL: https://doi.org/10/4291/43038, doi:10/4291/43038.
20. (cuny2021ripkproteinkinase pages 3-4): Gregory D. Cuny and Alexei Degterev. Ripk protein kinase family: atypical lives of typical kinases. Seminars in Cell & Developmental Biology, 109:96-105, Jan 2021. URL: https://doi.org/10.1016/j.semcdb.2020.06.014, doi:10.1016/j.semcdb.2020.06.014. This article has 85 citations.
21. (cuny2021ripkproteinkinase pages 6-8): Gregory D. Cuny and Alexei Degterev. Ripk protein kinase family: atypical lives of typical kinases. Seminars in Cell & Developmental Biology, 109:96-105, Jan 2021. URL: https://doi.org/10.1016/j.semcdb.2020.06.014, doi:10.1016/j.semcdb.2020.06.014. This article has 85 citations.
22. (cuny2021ripkproteinkinase pages 8-8): Gregory D. Cuny and Alexei Degterev. Ripk protein kinase family: atypical lives of typical kinases. Seminars in Cell & Developmental Biology, 109:96-105, Jan 2021. URL: https://doi.org/10.1016/j.semcdb.2020.06.014, doi:10.1016/j.semcdb.2020.06.014. This article has 85 citations.
23. (fransen2011exploringtherole pages 137-139): M Fransen. Exploring the role of caspases and ripk4 during xenopus development. Unknown journal, 2011.
24. (huang2018crystalstructureof pages 9-10): Christine S. Huang, Nina Oberbeck, Yi-Chun Hsiao, Peter Liu, Adam R. Johnson, Vishva M. Dixit, and Sarah G. Hymowitz. Crystal structure of ripk4 reveals dimerization-dependent kinase activity. Structure, 26:767-777.e5, May 2018. URL: https://doi.org/10.1016/j.str.2018.04.002, doi:10.1016/j.str.2018.04.002. This article has 26 citations and is from a domain leading peer-reviewed journal.
25. (lv2022comparativeandevolutionary pages 1-3): Shangge Lv, Yu Jiang, Yuzheng Li, Rui-hua Huang, Lingyu Peng, Zhaoyin Ma, Nan Lu, Xiaoying Lin, and Jie Yan. Comparative and evolutionary analysis of rip kinases in immune responses. Frontiers in Genetics, Oct 2022. URL: https://doi.org/10.3389/fgene.2022.796291, doi:10.3389/fgene.2022.796291. This article has 7 citations and is from a peer-reviewed journal.
26. (lv2022comparativeandevolutionary pages 12-13): Shangge Lv, Yu Jiang, Yuzheng Li, Rui-hua Huang, Lingyu Peng, Zhaoyin Ma, Nan Lu, Xiaoying Lin, and Jie Yan. Comparative and evolutionary analysis of rip kinases in immune responses. Frontiers in Genetics, Oct 2022. URL: https://doi.org/10.3389/fgene.2022.796291, doi:10.3389/fgene.2022.796291. This article has 7 citations and is from a peer-reviewed journal.
27. (lv2022comparativeandevolutionary pages 15-15): Shangge Lv, Yu Jiang, Yuzheng Li, Rui-hua Huang, Lingyu Peng, Zhaoyin Ma, Nan Lu, Xiaoying Lin, and Jie Yan. Comparative and evolutionary analysis of rip kinases in immune responses. Frontiers in Genetics, Oct 2022. URL: https://doi.org/10.3389/fgene.2022.796291, doi:10.3389/fgene.2022.796291. This article has 7 citations and is from a peer-reviewed journal.
28. (lv2022comparativeandevolutionary pages 15-16): Shangge Lv, Yu Jiang, Yuzheng Li, Rui-hua Huang, Lingyu Peng, Zhaoyin Ma, Nan Lu, Xiaoying Lin, and Jie Yan. Comparative and evolutionary analysis of rip kinases in immune responses. Frontiers in Genetics, Oct 2022. URL: https://doi.org/10.3389/fgene.2022.796291, doi:10.3389/fgene.2022.796291. This article has 7 citations and is from a peer-reviewed journal.
29. (lv2022comparativeandevolutionary pages 24-24): Shangge Lv, Yu Jiang, Yuzheng Li, Rui-hua Huang, Lingyu Peng, Zhaoyin Ma, Nan Lu, Xiaoying Lin, and Jie Yan. Comparative and evolutionary analysis of rip kinases in immune responses. Frontiers in Genetics, Oct 2022. URL: https://doi.org/10.3389/fgene.2022.796291, doi:10.3389/fgene.2022.796291. This article has 7 citations and is from a peer-reviewed journal.
30. (lv2022comparativeandevolutionary pages 6-7): Shangge Lv, Yu Jiang, Yuzheng Li, Rui-hua Huang, Lingyu Peng, Zhaoyin Ma, Nan Lu, Xiaoying Lin, and Jie Yan. Comparative and evolutionary analysis of rip kinases in immune responses. Frontiers in Genetics, Oct 2022. URL: https://doi.org/10.3389/fgene.2022.796291, doi:10.3389/fgene.2022.796291. This article has 7 citations and is from a peer-reviewed journal.
31. (salla2018molecularandepigenetic pages 69-74): M Salla. Molecular and epigenetic insights into rassf1a regulated pathways in inflammatory bowel disease. Unknown journal, 2018.
32. (salla2018molecularandepigenetica pages 69-74): M Salla. Molecular and epigenetic insights into rassf1a regulated pathways in inflammatory bowel disease. Unknown journal, 2018.
33. (stunnenberg…2021theroleof pages 3-5): HG Stunnenberg… L Della Torre, A Nebbioso. The role of necroptosis: biological relevance and its involvement in cancer. cancers 2021, 13, 684. Unknown journal, 2021.
34. (stunnenberg…2021theroleof pages 5-6): HG Stunnenberg… L Della Torre, A Nebbioso. The role of necroptosis: biological relevance and its involvement in cancer. cancers 2021, 13, 684. Unknown journal, 2021.
35. (urwylerrosselet2023functionsofthe pages 6-8): Corinne Urwyler-Rösselet, Giel Tanghe, Michael Devos, Paco Hulpiau, Yvan Saeys, and Wim Declercq. Functions of the rip kinase family members in the skin. Cellular and Molecular Life Sciences, Sep 2023. URL: https://doi.org/10.1007/s00018-023-04917-2, doi:10.1007/s00018-023-04917-2. This article has 5 citations and is from a domain leading peer-reviewed journal.
36. (xie2021smallmoleculekinaseinhibitors pages 53-54): Zhouling Xie, Xiaoxiao Yang, Yajun Duan, Jihong Han, and Chenzhong Liao. Small-molecule kinase inhibitors for the treatment of nononcologic diseases. Journal of Medicinal Chemistry, 64:1283-1345, Jan 2021. URL: https://doi.org/10.1021/acs.jmedchem.0c01511, doi:10.1021/acs.jmedchem.0c01511. This article has 82 citations and is from a highest quality peer-reviewed journal.
37. (xu2020insightintothe pages 1-2): Jing Xu, Qichun Wei, and Zhixing He. Insight into the function of ripk4 in keratinocyte differentiation and carcinogenesis. Frontiers in Oncology, Aug 2020. URL: https://doi.org/10.3389/fonc.2020.01562, doi:10.3389/fonc.2020.01562. This article has 35 citations and is from a peer-reviewed journal.
38. (zare2022theroleof pages 32-35): A Zare. The role of receptor interacting serine/threonine kinase 2 (ripk2) in inflammatory breast cancer (ibc). Unknown journal, 2022.
39. (zare2022theroleofa pages 32-35): A Zare. The role of receptor interacting serine/threonine kinase 2 (ripk2) in inflammatory breast cancer (ibc). Unknown journal, 2022.
40. (zare2022theroleofa pages 62-65): A Zare. The role of receptor interacting serine/threonine kinase 2 (ripk2) in inflammatory breast cancer (ibc). Unknown journal, 2022.
41. (bryan2018kinaseinhibitorsfor pages 16-17): Marian C. Bryan and Naomi S. Rajapaksa. Kinase inhibitors for the treatment of immunological disorders: recent advances. Journal of Medicinal Chemistry, 61:9030-9058, Jun 2018. URL: https://doi.org/10.1021/acs.jmedchem.8b00667, doi:10.1021/acs.jmedchem.8b00667. This article has 65 citations and is from a highest quality peer-reviewed journal.
42. (chirieleison2016syntheticbiologyreveals pages 1-2): SM Chirieleison. Synthetic biology reveals the uniqueness of the rip kinase domain. Unknown journal, 2016. URL: https://doi.org/10/4291/43038, doi:10/4291/43038.
43. (chirieleison2016syntheticbiologyreveals pages 7-9): SM Chirieleison. Synthetic biology reveals the uniqueness of the rip kinase domain. Unknown journal, 2016. URL: https://doi.org/10/4291/43038, doi:10/4291/43038.
44. (cuny2021ripkproteinkinase pages 2-3): Gregory D. Cuny and Alexei Degterev. Ripk protein kinase family: atypical lives of typical kinases. Seminars in Cell & Developmental Biology, 109:96-105, Jan 2021. URL: https://doi.org/10.1016/j.semcdb.2020.06.014, doi:10.1016/j.semcdb.2020.06.014. This article has 85 citations.
45. (dara2018thereceptorinteracting pages 1-3): Lily Dara. The receptor interacting protein kinases in the liver. Seminars in Liver Disease, 38:073-086, Feb 2018. URL: https://doi.org/10.1055/s-0038-1629924, doi:10.1055/s-0038-1629924. This article has 40 citations and is from a peer-reviewed journal.
46. (kalay2012mutationsinripk4 pages 3-4): E. Kalay, O. Sezgin, Vasant Chellappa, M. Mutlu, H. Morsy, H. Kayserili, Elmar Kreiger, A. Cansu, B. Toraman, E. Abdalla, Y. Aslan, S. Pillai, and N. Akarsu. Mutations in ripk4 cause the autosomal-recessive form of popliteal pterygium syndrome. American journal of human genetics, 90 1:76-85, Jan 2012. URL: https://doi.org/10.1016/j.ajhg.2011.11.014, doi:10.1016/j.ajhg.2011.11.014. This article has 121 citations and is from a highest quality peer-reviewed journal.
47. (lv2022comparativeandevolutionary pages 13-15): Shangge Lv, Yu Jiang, Yuzheng Li, Rui-hua Huang, Lingyu Peng, Zhaoyin Ma, Nan Lu, Xiaoying Lin, and Jie Yan. Comparative and evolutionary analysis of rip kinases in immune responses. Frontiers in Genetics, Oct 2022. URL: https://doi.org/10.3389/fgene.2022.796291, doi:10.3389/fgene.2022.796291. This article has 7 citations and is from a peer-reviewed journal.
48. (torre2021theroleof pages 5-6): Laura Della Torre, Angela Nebbioso, Hendrik G. Stunnenberg, Joost H. A. Martens, Vincenzo Carafa, and Lucia Altucci. The role of necroptosis: biological relevance and its involvement in cancer. Cancers, 13:684, Feb 2021. URL: https://doi.org/10.3390/cancers13040684, doi:10.3390/cancers13040684. This article has 40 citations and is from a peer-reviewed journal.
49. (urwylerrosselet2023functionsofthe pages 10-11): Corinne Urwyler-Rösselet, Giel Tanghe, Michael Devos, Paco Hulpiau, Yvan Saeys, and Wim Declercq. Functions of the rip kinase family members in the skin. Cellular and Molecular Life Sciences, Sep 2023. URL: https://doi.org/10.1007/s00018-023-04917-2, doi:10.1007/s00018-023-04917-2. This article has 5 citations and is from a domain leading peer-reviewed journal.
50. (urwylerrosselet2023functionsofthe pages 13-14): Corinne Urwyler-Rösselet, Giel Tanghe, Michael Devos, Paco Hulpiau, Yvan Saeys, and Wim Declercq. Functions of the rip kinase family members in the skin. Cellular and Molecular Life Sciences, Sep 2023. URL: https://doi.org/10.1007/s00018-023-04917-2, doi:10.1007/s00018-023-04917-2. This article has 5 citations and is from a domain leading peer-reviewed journal.