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- ADP-ribosylated oligopeptides using ribosylated amino acid building blocks. *J Am Chem Soc* **132**: 5236–5240.
- Verheugd P, Forst AH, Milke L, Herzog N, Feijs KL, Kremmer E, Kleine H, Luscher B. 2013. Regulation of NF-kB signalling by the mono-ADP-ribosyltransferase ARTD10. *Nat Commun* 4: 1683.
- Vivelo CA, Wat R, Agrawal C, Tee HY, Leung AK. 2016. ADPriboDB: the database of ADP-ribosylated proteins. *Nucleic Ac*ids Res 45: D204–D209.
- Vyas S, Chesarone-Cataldo M, Todorova T, Huang YH, Chang P. 2013. A systematic analysis of the PARP protein family identifies new functions critical for cell physiology. *Nat Commun* 4: 2240.
- Vyas S, Matic I, Uchima L, Rood J, Zaja R, Hay RT, Ahel I, Chang P. 2014. Family-wide analysis of poly(ADP-ribose) polymerase activity. *Nat Commun* 5: 4426.
- Wahlberg E, Karlberg T, Kouznetsova E, Markova N, Macchiarulo A, Thorsell AG, Pol E, Frostell A, Ekblad T, Oncu D, et al. 2012. Family-wide chemical profiling and structural analysis of PARP and tankyrase inhibitors. *Nat Biotechnol* 30: 283–288.
- Wang Z, Michaud GA, Cheng Z, Zhang Y, Hinds TR, Fan E, Cong F, Xu W. 2012. Recognition of the iso-ADP-ribose moiety in poly(ADP-ribose) by WWE domains suggests a general mechanism for poly(ADP-ribosyl)ation-dependent ubiquitination. *Genes Dev* 26: 235–240.
- Wang Y, Zhang T, Kwiatkowski N, Abraham BJ, Lee TI, Xie S, Yuzugullu H, Von T, Li H, Lin Z, et al. 2015. CDK7-dependent transcriptional addiction in triple-negative breast cancer. *Cell* 163: 174–186.
- Wang Y, An R, Umanah GK, Park H, Nambiar K, Eacker SM, Kim B, Bao L, Harraz MM, Chang C, et al. 2016. A nuclease that mediates cell death induced by DNA damage and poly(ADPribose) polymerase-1. *Science* **354**: aad6872.
- Welsby I, Hutin D, Gueydan C, Kruys V, Rongvaux A, Leo O. 2014. PARP12, an interferon-stimulated gene involved in the control of protein translation and inflammation. J Biol Chem 289: 26642–26657.
- Westcott NP, Fernandez JP, Molina H, Hang HC. 2017. Chemical proteomics reveals ADPribosylation of small GTPases during oxidative stress. *Nat Chem Biol* doi: 10.1038/nchembio.2280.
- Wright RH, Lioutas A, Le Dily F, Soronellas D, Pohl A, Bonet J, Nacht AS, Samino S, Font-Mateu J, Vicent GP, et al. 2016. ADP-ribose-derived nuclear ATP synthesis by NUDIX5 is required for chromatin remodeling. *Science* **352:** 1221–1225.
- Wu C. 1997. Chromatin remodeling and the control of gene expression. J Biol Chem 272: 28171–28174.

- Ying W. 2008. NAD+/NADH and NADP+/NADPH in cellular functions and cell death: regulation and biological consequences. Antioxid Redox Signal 10: 179–206.
- Yu SW, Wang H, Poitras MF, Coombs C, Bowers WJ, Federoff HJ, Poirier GG, Dawson TM, Dawson VL. 2002. Mediation of poly (ADP-ribose) polymerase-1-dependent cell death by apoptosisinducing factor. Science 297: 259–263.
- Yu W, Ginjala V, Pant V, Chernukhin I, Whitehead J, Docquier F, Farrar D, Tavoosidana G, Mukhopadhyay R, Kanduri C, et al. 2004. Poly(ADP-ribosyl)ation regulates CTCF-dependent chromatin insulation. *Nat Genet* 36: 1105–1110.
- Zhang X, Kurnasov OV, Karthikeyan S, Grishin NV, Osterman AL, Zhang H. 2003. Structural characterization of a human cytosolic NMN/NaMN adenylyltransferase and implication in human NAD biosynthesis. *J Biol Chem* 278: 13503–13511.
- Zhang T, Berrocal JG, Frizzell KM, Gamble MJ, DuMond ME, Krishnakumar R, Yang T, Sauve AA, Kraus WL. 2009. Enzymes in the NAD<sup>+</sup> salvage pathway regulate SIRT1 activity at target gene promoters. J Biol Chem 284: 20408–20417.
- Zhang Y, Liu S, Mickanin C, Feng Y, Charlat O, Michaud GA, Schirle M, Shi X, Hild M, Bauer A, et al. 2011. RNF146 is a poly(ADP-ribose)-directed E3 ligase that regulates axin degradation and Wnt signalling. *Nat Cell Biol* 13: 623–629.
- Zhang T, Berrocal JG, Yao J, DuMond ME, Krishnakumar R, Ruhl DD, Ryu KW, Gamble MJ, Kraus WL. 2012. Regulation of poly (ADP-ribose) polymerase-1-dependent gene expression through promoter-directed recruitment of a nuclear NAD<sup>+</sup> synthase. *J Biol Chem* **287**: 12405–12416.
- Zhang Y, Wang J, Ding M, Yu Y. 2013. Site-specific characterization of the Asp- and Glu-ADP-ribosylated proteome. *Nat Methods* **10**: 981–984.
- Zhang Y, Mao D, Roswit WT, Jin X, Patel AC, Patel DA, Agapov E, Wang Z, Tidwell RM, Atkinson JJ, et al. 2015. PARP9-DTX3L ubiquitin ligase targets host histone H2BJ and viral 3C protease to enhance interferon signaling and control viral infection. *Nat Immunol* 16: 1215–1227.
- Zhao H, Sifakis EG, Sumida N, Millan-Arino L, Scholz BA, Svensson JP, Chen X, Ronnegren AL, Mallet de Lima CD, Varnoosfaderani FS, et al. 2015. PARP1- and CTCF-mediated interactions between active and repressed chromatin at the lamina promote oscillating transcription. *Mol Cell* 59: 984–997.
- Zocchi E, Franco L, Guida L, Benatti U, Bargellesi A, Malavasi F, Lee HC, De Flora A. 1993. A single protein immunologically identified as CD38 displays NAD<sup>+</sup> glycohydrolase, ADP-ribosyl cyclase and cyclic ADP-ribose hydrolase activities at the outer surface of human erythrocytes. *Biochem Biophys Res Commun* 196: 1459–1465.