From Pauling's abzyme concept to the new era of hydrolytic anti-DNA autoantibodies: a link to rational vaccine design? - A review.

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Specific entities of naturally-occurring DNA hydrolytic/cytotoxic antibodies (abzymes) are linked to autoimmune and lymphoproliferative disorders. Suggested sequence of underlying activities conform to such entities penetrating the living cells, trans-locating to nucleus and recognising specific binding sites within single- or double-stranded DNA. Their origin is unknown since corresponding immunogens are unidentified. These anti-DNA antibodies could be the organism's immune response to microbial attack. Their structure, function and pathogenicity were investigated in wet-lab and via bioinformatics in context of Rational Vaccine Designs. This paper offers a comprehensive critical review on the subject in the light of known and newly proposed concepts.